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THE PC IN YOUR TV!



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WHAT'S HOT 2006

This year's complete tech guide



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Will Canon keep the crown?

GAME HARDWARE

Mice, wheels and joysticks

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AUSTRALIAN PC AUTHORITY

BUYERS GUIDE

NEW SECTION

Every month, we present the latest products in a range of categories. Turn to page 105 before you buy your next PC or component.

+ ALL NEW A-LIST

Only the best of the best make it to the A-List. Our revamped listings now feature 45 categories, from PCs to MP3 players. Turn to page 106

Buyers Guide

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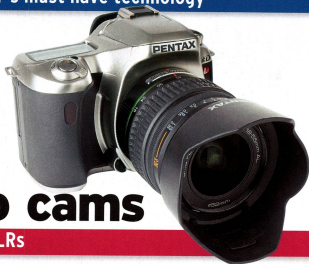
THIS MONTH



WHAT'S HOT

This year's must have technology

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Pro cams

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& MUCH MORE...

TOP FEATURES

WHAT'S HOT 2006

Last year laid down the foundations for new technologies and products. The next 12 months will see these come to fruition. Find out what's hot next year. 24

IN THE LABS

DIGITAL SLRS

Once the domain of professionals, digital SLRs have dropped in price, and increased in quality. We look at the latest camera crop. 70

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If you were to pick the hottest technology or product last year, what's the first thing that comes to mind? If you're struggling, don't worry about it. 2005 will go down as the year without a bang – no single product or technology blasted into the forefront that changed how we live or interact with computers.

But that's not to say nothing happened. Just below the surface were tectonic shifts in technology. We saw VoIP services sneak in through the back door, new web services subtly overlaying themselves on the web, and the PC split into new mainstream areas like entertainment.

Now that these technologies are in place, 2006 will herald a new wave of products and services that make use of it. We'll see new and innovative web services that collect data from multiple locations, tailored to our own desires. Google had a flying headstart, but this year will see the competition ramp up against the common enemy.

VoIP will become more just cheaper phone bills – it'll bundle in new features that could not have been possible under existing networks. Right now I'm using inet's Nephone to email voice messages left on my phone, meaning I can simply listen anywhere, forward them to relevant people, and store for later use. This is a consequence of the IP nature of VoIP, where it can take advantage of the existing network.

2005 also gave us a glimpse at a new breed of mainstream computer thanks to Fujitsu's Desktop TX. It's bulky and expensive, but this media PC and TV in a box is surely an indication of things to come.

This is also the year Microsoft's Vista will hit. If the company is watching the landscape, it will hook into last year's quiet revolution and deliver a stable, secure and feature-packed operating system that ties into the new wave of web services and delivers on its promises.

But what technologies are you waiting for this year? Let me know at the email below.

David Kidd, Editor
dkidd@pcauthority.com.au



New section: Buyers Guide, page 105

Our new section hosts our expanded A-List and a round up of our past reviews. This is your indispensable tool to buying any computer product. Let us know what you think at:

feedback@pcauthority.com.au

PCAUTHORITY

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CIRCULATION: January 2005 - June 2005: 48,630

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Techdesk

Latest news, trends and products in the world of technology.

TESTING TIMES

Know your business?

Mergers and takeovers are happening so quickly, it can be almost impossible to keep pace with it all. See how well you have kept up to date by identifying who owns what.

1. Who owns the friends networking website myspace.com?

- a) News Corp
- b) Microsoft
- c) Google

2. Dating site RSVP was bought out recently. Who bought it?

- a) Google
- b) Telstra
- c) Fairfax

3. Who makes IBM laptops?

- a) IBM
- b) Lenovo
- c) Toshiba

4. Who makes IBM hard disks?

- a) IBM
- b) Samsung
- c) Hitachi

5. Who owns Lotus software?

- a) Microsoft
- b) Corel
- c) IBM

6. Who owns the Netscape browser?

- a) AOL
- b) Firefox
- c) Mozilla

7. Who makes Linksys routers?

- a) Netgear
- b) Cisco
- c) NetComm

8. Who owns ICQ messenger?

- a) Google
- b) AOL
- c) No-one

ANSWERS

1.A 2.C 3.B 4.A 5.C 6.A 7.B 8.B

THE LAND OF GIANTS

Big business swallows up the minnows in mergers as they try to take over the world.

Do you know who you're dealing with? It's a more complicated question than you might realise as more and more companies enter into mergers, joint promotions and good old-fashioned buy-outs and takeovers.

The latest joint venture is Yahoo! Australia's tie-up with Seven, which is set to take on the longstanding partnership between TV rival channel Nine and Microsoft over at ninemsn. A new name for the TV-internet tie up will be announced later this month.

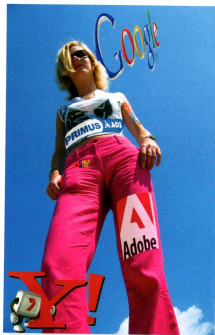
But Seven also owns Pacific Magazines which means their content is also included – so finding what's in the latest issue of New Idea or Girlfriend will mean looking on the Yahoo!-Seven site... a leap that many consumers won't realise they have to make.

However it is symptomatic of the many corporate giants being created on the net (sometimes apparently randomly) and not just those aiming for a multimedia role.

Google of course is one of the main players – it started off with acquisitions like DejaVu which gave it access to a huge usenet archive.

It's since followed up by buying the Blogger site, Picasa picture software and a satellite mapping company to create Google Earth.

eBay too moved out of being purely an auction site by buying PayPal and Skype VOIP companies... and more acquisitions are being tipped in the near future.



Telstra too has TV tie ups with Foxtel, Sensis, Whereis, and rival Optus is owned by SingTel but sharing 3G with Vodafone.

Sometimes it's easier to buy a rival than out-innovate them, as seen by Adobe buying graphics rival Macromedia. But for consumers, it's one more nail in the coffin of choice.

MULTINATIONAL MULTIMEDIA - THE FUTURE

Companies fast-forwarding into film and TV.

The race is on for websites to spread their wings and provide ever more content for users.

After the initial rush to find text content for sites – gleaned from news agencies and magazines – the new internet gold rush is to get in on video content.

Very soon, people will be turning to the Internet for things to watch on television.

So now the big corporations are desperately trying to sign up TV stations and movie studios in partnership deals in a bid to futureproof themselves from the brave new world ahead.

Expect even more deals like Yahoo! and Seven's as the others race to catch up with Time-Warner AOL whose tie ups with Internet, film and TV currently dominate the landscape.

'We can deliver the most engaging and innovative rich media experience for Australian audiences and advertisers.'

Yahoo!'s Terry Semel stopped short of offering delayed downloads of Sunrise for \$2.99 per show. Thank God.

WIDE OPEN TO WI-FI WARRIORS

Australian business slow to secure its corporate secrets.

Australian companies are leaving themselves wide open to Wi-Fi warriors hacking into their networks, a new study has found.

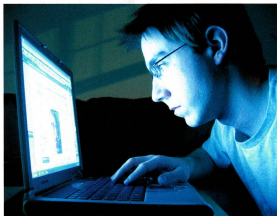
Up to one in three companies were found to use Wi-Fi networks still set on default properties and Australia-wide, one in four have no security encryption whatsoever.

Anyone with a Wi-Fi-enabled laptop could access any of the company networks and with a simple, easy-to-use program, could even access files being transferred across the network.

The report by IT providers Altiris and SpectroTech tested all the main capitals by simply driving through CBDs while trying to access business networks.

Sydney came out best with just one in ten networks open to hackers – there was one in eight in Canberra and almost one in five in Melbourne – but in Adelaide, more than one in three were easily accessed.

And even those companies who had actually implemented basic security measures were still only using the easily cracked WEP system rather than the more advanced WPA. Almost three out of four



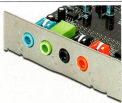
companies were found to use the outdated WEP system, which can be cracked in a matter of moments by a passing determined hacker (called War Driving in Wi-Fi hacking circles).

Amazingly though, Australia is no worse than most other countries. Corporate computing has yet to secure its Wi-Fi networks despite the obvious risks.

HEAD TO HEAD:

Onboard sound vs USB external

Notebooks and most motherboards offer built-in sound these days. Is it worth buying an external unit?



Onboard sound vs Creative Audigy NX2 USB

PRICE?

Free with motherboard

\$193

WHY WOULD YOU?

You can't turn your nose up at something that's free. It comes built-in to your motherboard and there's usually very little setup.

WHY WOULDN'T YOU?

Modern onboard sound supports up to 7.1 surround, but most lack digital in and outs (especially optical). Its less sophisticated chip may also overload the CPU, especially when gaming.

SHOULD YOU?

If you don't have quality speakers, you probably won't notice the sound improvement in music, but games will run smoother and sound better with the Audigy NX2.

One word: digital. It offers coax out and optical in and out, plus stereo jacks, headphones and mic, and a multimedia remote.

Why pay at least \$193 for something you probably already have for free? Although it boasts 24-bit/96kHz sound quality, trying to use this mode led to stutter on a 3.06GHz CPU.

It's a lot of money, but the remote control can be very handy and everything will sound (a bit) better than relying on built-in sound. Get it if you really want hassle-free, top-quality music.

Cheap laptop flop

■ A US drive to bring the wired world to the Third World will prove to be a flop, Intel chief Craig Barrett has claimed. Apparently the Third World doesn't want \$100 laptops, he says, despite a plan by MIT to distribute millions of them among schoolchildren in Brazil, Thailand, Egypt and Nigeria. Barrett claims the laptop is nothing more than a gadget, and gadgets have failed in these markets in the past. We're sure his views have nothing to do with the devices being powered by AMD chips rather than Intel ones.

Firefox exploit

■ The latest Firefox 1.5 has a weakness that can render the browser unusable – and may even allow a website to install dodgy malware in the process. A patch is on its way, but anyone affected should delete the history.dat file then reboot.

Sober revived

■ Net connections quietly slowed down in the lead up to Christmas as yet another Sober worm variant battered ISPs. It could make another comeback this month, but analysts are confident they have cracked this latest mutation and defused a web link that was set to revive it all over again.

Optus shake-up

■ Yahoo! Australia & NZ has launched a competition which will give users of their 'Habbo Hotel' chat site the chance to play in an online DJ competition and even form a virtual band to headline an online music festival. More details at www.habbohotel.com.au if you're into that sort of thing.

Best blog in Oz

■ Australian artist Jodi Rose has won the first SmartyBlog Award for her blog at www.singingbridges.net/diary. She scooped \$10,000 for her diary recording the unique sounds of different bridges around the world. And if that description doesn't make you log onto the site, nothing will.

'Information crossing a wireless network in plain text is handing corporate secrets to the competition.'

IT security expert Laura Chappell forgets that corporate jargon can baffle even the most hardened hacker though.

Creative sues Apple

■ Creative apparently own the patent on file hierarchies, which will come as a surprise to most. However the company is convinced they have a case when it comes to file system structures and navigation on portable music players (dating back to 2000) and claim Apple has breached the patent on the iPod. Exactly why it's taken them five years to notice has not yet been revealed. Maybe they were saving up their pocket money to buy an iPod... or to fund the expected lengthy legal battle that will now ensue.

eBay nasties spread

■ There seems to be no end to the criminal ingenuity of people using eBay. Within days of the release of the new Xbox 360, ads appeared that seemed to be offering units for sale. It was only in the second last sentence that the seller revealed they were actually just selling a photograph of the console. He was banned but not before he had been selling his Xbox picture for up to \$1250 a time. Now hackers have got in on it too – one seller claimed to be selling details of a flaw in Excel which would turn over control of a PC to the hacker. eBay pulled the ad before any sales were finalised.

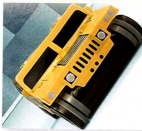
Nova pirates

■ Given the determination of software publishers to stamp out warez version of their products, wouldn't it be embarrassing if one of the biggest games developers was caught using illegal software? Poor old Novalogic then – developer and publisher of some of the biggest titles on the PC, PS2 and Xbox. An audit revealed the company had pirate versions of programs by Adobe, Apple, and Microsoft to name but a few. The company coughed up \$200,000 to the Business Software Alliance and promised not to do it again.

Rich Friends Reunited

■ Schoolmates website Friends Reunited has been sold to UK broadcaster ITV for a staggering \$350 million. It started just five years ago and was originally run out of the developer's bedroom.

Most Wanted



WIRELESS MAGIC

This is great. It would, of course, be greater if it was in silver or piano black, but we digress. It's a Wi-Fi finder (it alerts you when there's a wireless network nearby) but it also shows you where the strongest signal can be picked up – handy for setting up home Wi-Fi (or for hackers). <http://tinyurl.com/8w6cj>

CLOCKING OFF

Whiny little flying things like mosquitos guarantee you a sleepless night, so someone designed an alarm clock based on the same principle. When it goes off, it flies into the air, making an annoying noise until you smash it with a newspaper. Aerogard is ironically no use whatsoever. <http://tinyurl.com/bcdy8>

PERFECT PODCASTS

For those who insist on polluting the internet with inane ramblings and posting them as podcasts, then this is the device for them to at least do it in beautiful high fidelity. Similar specs to the Cyberman recorder last month, but this one is just a fraction of the price at about \$750. <http://tinyurl.com/9tita>

BLUETOOTH VOIP

Gathering around a wired headset to make a conference VOIP call can get a little too close for comfort if it was garlic for dinner last night. Solve those bad breath blues by using this wireless, Bluetooth-enabled VOIP speakerphone. And it looks like a UFO too which has to be good. <http://tinyurl.com/dq3ev>

DRIVEN MAD?

Kids driving you up the wall? Well, get them this and they can drive it up the wall instead – literally. The Remote-Controlled Humvee Zero Gravity Wall Climber uses a suction fan and conveyor-belt wheels technology to climb vertically. <http://tinyurl.com/8e6sl>

HOT...

3G laptop cards

▲ Techdesk hasn't tested Vodafone's new 3G network yet but we're quite excited by it. Data transfer costs might be an issue but the wireless freedom it offers could be perfect for hassle-free web and email access on the road. We'll have to remember to switch off Azures before logging in though.

Wi-fi extenders

Can't quite reach the pool with your basic Wi-Fi? Plug in one of the new NetComm NP560 wireless boosters and the outdoor world is your Wi-Fi oyster again. Just make sure your router aerial is detachable before you rip it out to connect up the booster. This is the voice of experience speaking...

Telstra

It's still trying everything in its power to gain a foothold over the competition. A new move came with a strange amendment to the wholesale agreement with ISPs, many of whom offer free uploads (unlike Telstra). The new change appears to allow Telstra to throttle bandwidth to rival ISP customers who upload more than 50 percent of their total downloads, if that adds up to more than 30GB of uploads a month. Naughty.

Microsoft

There's an Xbox story on almost every page of Techdesk this month... and none of them is good. Microsoft obviously rushed the new 360 to the market to make it in time for Christmas and give them a big installed user base ahead of the PS3 launch. But in the process, the company clearly released a product that simply wasn't ready yet. There isn't enough units, those that are out don't appear to work as they should, and the feature set isn't the same as was promised at its launch because HD-DVD hasn't been released yet.

...NOT

'As a software developer, our organisation depends on respect for our intellectual property rights.'

Novalogic President Lee Milligan wipes the egg from his face after his company was caught with dodgy software.

360 GETS A WARM WELCOME

Microsoft's new baby is hung out to cool by users



It appears that Microsoft is well on its way to achieving its goal of shipping three million Xbox 360s by Christmas, with widespread shortages in its initial launch country, America.

Even those who had pre-ordered a 360 weren't guaranteed to receive a console, with many disgruntled customers walking away empty handed from stores that opened at midnight.

There were even reports of stores being held up at gun point for 360s, obviously by gamers who had spent a little too much time playing the Grand Theft Auto series.

However, while the sell out sales were good news for Microsoft, it wasn't all smooth sailing for the launch – within days vocal gamers started posting on forums about a variety of crashing issues. A common complaint seemed to point to the large external power supply overheating, and it wasn't long before a solution was found.

By suspending the power supply in mid-air, often with fishing wire, the increased air flow around the unit apparently stopped the crashing issues. Thankfully Microsoft's return policy received widespread acclaim, and the company claims that the number of

defective units is below three percent. But if this failure rate stays at a steady three percent, there are going to be around 90,000 unhappy kiddies come this Christmas. See over the page for even more Xbox 360 problems.



Chinks appear in Blu-ray's hi-definition armour

► Nice to see Sony is keeping the branding simple and consistent on Blu-ray discs. Calling it HD ROM wouldn't be trying to confuse consumers now, would it?



Microsoft's decision not to back Blu-ray drives in the 360 might prove to be wise given a couple of revelations that have recently surfaced regarding this upcoming storage technology.

The first of these is that Sony is backing the rather old MPEG-2 format at the launch of Blu-ray. But it's for good reason, according to Don Eklund, senior VP of advanced technology at Sony pictures.

'Advanced formats don't necessarily improve picture quality,' said Eklund. 'Our goal is to present the best picture quality for Blu-ray. Right now, and for the foreseeable

future, that's with MPEG-2.' Unfortunately this means that Apple's commended H.264 codec (also known as MPEG-4) won't necessarily be supported; likewise with Microsoft's new VC-1 codec.

Cost has reared its head as the second problem that may face Blu-ray. According to cnet.com, an unnamed executive at a manufacturing plant showed that Blu-Ray disks were twice as expensive to produce as HD DVD disks. Sony was quick to retaliate, claiming that no price difference has yet to be determined, and if one was to eventuate it would be minimal.

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Intel's Awesome Foursome

It was obvious from day one that Intel's multi-cored processor strategy wasn't going to begin and end at dual core chips, but details of Intel's first quad-core chip have become available. The company has already taped out prototypes of the Kentsfield chip, utilising four cores and based on 65nm fabrication technology.

According to Intel, the 65nm process is already providing yields of much more mature fabrication processes. While the clock speeds of each core are still unknown, the chip will have a total of 4MB of cache, suggesting each core has its own dedicated 1MB. Expect the Kentsfield to chip a PC near you sometime in early or mid-2007. Given the lack of multi-threaded software despite the launch of dual-cored chips, we expect to see programmers using quad cores effectively sometime after 2020...

'The debut of Xbox 360 marks one of the biggest consumer launches in Microsoft's history.'

Better luck to you next time then, Robbie Back (Chief Xbox Officer).

More 360 woes

■ Fuelling the cynical belief that the company behind Windows wouldn't release its next-gen fully working game console straight off the box comes reports of technical problems and dissatisfaction. Scratched disks, shortages, overheating, lack of backwards compatibility, buggy patches, no Blu-ray or HD-DVD, and class action legal battles already. While Australians moaned about the lagging release date, at least we can hope that the bugs have been ironed out before it lands.

Pluck the law

■ The latest target in the sights of lawyers and record companies/music publishers are websites that show you how to strum along to your favourite song. And they're not just aiming to shut them down. These guys actually want to put some hapless musos in jail for having the temerity to work out the chord patterns to the latest hits and putting them on the web so you can sing and play along. Next stop, kids being charged for humming the number one in the schoolyard...

Linux servers down

■ Windows Server software has outsold Linux server software for the first time, according to a new study. Stunned penguin fans are not down though - the study was based on sales revenue - and MS products cost more than Linux for the outlay.

gPay on its way?

■ Google and eBay are destined for a showdown as both head down similar paths. Now eBay has Skype and Google has GoogleTalk, the search giant is said to be looking at launching its own payment system to rival PayPal, presumably to buy direct from advertisers.

Get in touch

■ Send details of news, new products or technologies to techdesk@pcauthority.com.au



ACSVIEW

Power to the people

Edward Mandla heard it on the powerline that something very exciting is happening in Tasmania.

Aurora, Tasmania's electricity supplier, is trialling the delivery of broadband services over its electricity grid, known as broadband over power lines (BPL). Once the network infrastructure has been installed, the service works by simply plugging a special modem into any power outlet and connecting it to your PC.

First generation BPL equipment can attain speeds up to 45Mbps, which is many times faster than what's on offer from the telcos. They are currently looking at the next generation of BPL delivery equipment, which has the potential to deliver speeds of up to 200Mbps.

As part of the trial, customers can also access VoIP services with phone calls at much cheaper rates than standard offerings. The BPL modem has a separate phone jack to connect either your existing phone or a VoIP phone.

What makes BPL truly exciting is the range of services that can be delivered, such as IPTV (Internet Protocol Television). For those without a computer, there is a set top box that allows you to surf the Net on your TV.

INTERFERENCE ISSUES

There are opponents to BPL, mainly from the amateur radio community which claims that BPL interferes with its network and the Australian Communications and Media Authority is currently developing a regulatory framework for BPL.

But what makes BPL such an attractive proposition for utility companies is that they only have to concentrate on delivering the infrastructure and can outsource the service provision to other companies. For instance, Engin delivers the VoIP service via



a dedicated virtual network provided by Aurora.

Similarly, if a company wants to deliver IPTV within Tasmania, Aurora will provide it with its own virtual network. This eliminates interference with the other services, ensuring that the data used for VoIP has no impact on the customer's broadband download limit.

Another advantage for Aurora is that BPL connectivity only requires a linesman to climb up the pole and latch on the equipment to connect a customer. This puts other telcos at a huge disadvantage, as they have to roll out the infrastructure and hope customers sign up.

For the telcos to compete, they need to start rolling out fibre networks. However, this will take 5 to 10 years and will cost a substantial sum. Even getting fibre into the home, they will still be disadvantaged by the fact that there is a power socket in every room. You can see why some telcos are concerned.

The Aurora trial ends early this year with a view to commercial rollout by the middle of the year. Those lucky Tasmanians will be the first to enjoy ultra fast broadband in Australia.

Class action

Perhaps the biggest impact is that BPL will allow you to turn power sockets into an instant LAN. Chip-enabled devices will be accessible simply by plugging them in. You can have a central DVD player directing video output to specific TVs. And BPL will enable home automation without extensive extra wiring. Home security, air-conditioning, lighting, watering systems and other chip-enabled devices can all be controlled via a BPL network. Aurora's Piero Peroni even sees BPL providing home health services. As he explained, 'If a customer has a chip-enabled fridge, then we can monitor when the door is opened and closed. For elderly people living alone, if the fridge door has not been opened in 24 hours, we can send someone to check up on them.'



Edward Mandla is immediate past president of the Australian Computer Society. See www.acs.org.au.

'BPL only requires a linesman to climb up the pole and latch on the equipment to connect a customer.'

How long until the first hacker wannabe is electrocuted trying to get free net access?

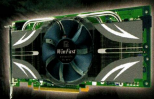


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DIY

Build your portable media center

■ If you already have a halfway decent laptop and S-Video ready TV, you're closer than you think. A DVD player and a standard ATI 9000 graphics card, even with shared memory, and an S-Video output are the basic requirements (preferably with Wi-Fi access), and most laptops purchased in the last two years should have those.

■ First up, buy an S-Video cable and plug it into your TV and laptop. Fire up the laptop, right-click on desktop, go to Properties | Settings and enable the second monitor (your TV). You can also choose to use the TV as your only monitor so you never have to use the laptop screen. Now go to Screensaver | Power | Advanced and see if there is an option to 'Do nothing' if the laptop lid is closed. Select it if available. Close the lid. You now have a sub tiny, portable media center that will fit in your TV stand.

■ Next, buy a top flight set of speakers like the Logitech Z5500 for full Dolby Digital Theatre Surround Sound and an external soundcard like the Audigy 2NX USB with optical and coax digital outputs that plug nicely into the Z5500. The advantage of the Audigy (apart from great sound) is it comes with a remote control that will also access your media files via Creative's bundled software.

■ To boost your media space, buy an external USB HDD case and a big IDE HDD - it's much cheaper to put them separate and buy them together yourself than buy ready-made externals.

■ Finally plug in a USB digital TV tuner if you need one. If you've already got the laptop, the total cost is about \$1200 for a killer, state-of-the-art digital media center and home theatre that will play all your music and movies... and still be a notebook.

TECHNOLOG

Big, loud and pig ugly

Why are all Media Center PCs so clunky? **Tim Dean** thinks we need to look to notebook technology to save the day.

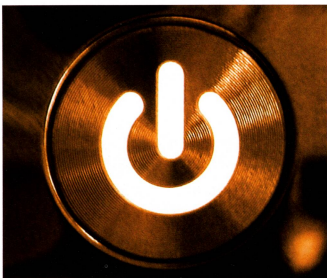
What is a Media Center PC? I'm talking its fundamental essence, its Platonic Form? Is it a personal video recorder? Is it a DVD player? Is it a hub for all your digital media? Is it a PC?

This seems to be a difficult question to answer, not least by those who are actually building MC PCs. It's apparent that a MC PC can be any or all the aforementioned things, and maybe it's this fact that makes answering this question moot in itself - it doesn't have a single fundamental essence at all.

Microsoft certainly doesn't seem to be helping matters. It offers a wealth of information to system builders, helping them to create better MC PCs, but this information also assumes a broad approach. It talks a lot about specs, TV tuners and video decoders, and it even talks a bit about form factor. But these guides tend to dilute their message by talking about MC PCs for three very different environments - the study, the living room and the laptop - each of which have very different parameters.

Then there's that ever-present argument that Media Center might as well just be slapped on any machine that would normally run Windows XP Home. Sure Media Center can bring some extra functionality to XP Home, but if Microsoft is trying to carve a niche into the big and alien world of consumer electronics, this kind of 'PC that happens to run Media Center' mentality is only doing it harm.

Personally, I see Media Center's fundamental essence, and greatest strength, in the living room, with its core functionality being to watch and record television. Give it dual high definition



tuners and a few hundred gig of hard disk space, and an electronic programme guide (of course), and you're well over half way to building a compelling proposition for the living room. Its secondary role is as a digital hub, with all other features, including Internet access and other PC applications, being firmly tertiary.

In this guise, a Media Center PC is a truly impressive addition to your living room, albeit still an expensive one. But there's one last, and major, hurdle to overcome before MC PCs take over our living rooms - form factor.

I'm continually amazed at the shapes and sizes in which MC PCs are presented to us - all invariably ugly and large. Now, I know that hardware standards make it difficult to innovate with form factors, but it's not rocket science to get creative with PC design. I do hear a lot of PC assemblers complain about PC chassis, noisy cooling fans, big crunchy hard drives, so what are the alternatives?

Hmmm, let's see. We need components that are not only

compact, but are designed to operate in close spaces with limited ventilation. We also need devices that consume less power, thus generating less heat, thus requiring less active cooling.

But they also need to have decent levels of performance too. Well blow me down, that sounds a lot like notebook hardware to me!

It's like one of those pantomimes - with perplexed PC manufacturers on stage, and us pointing to the notebook hardware shouting 'it's right in front of you!'.

So there's my challenge to a PC assembler: build a focussed living room Media Center PC, using notebook parts, that packs in at least two standard definition digital tuners, an EPG and 200GB hard disk space, and make it no bigger than a slim DVD player. If it comes in under a couple of grand, then it's sure to be a winner.



'It's like a pantomime with us pointing at the notebook hardware shouting 'it's in front of you!'

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Web 2.0

There's jargon, damned jargon, and hyperbole, and it's not entirely clear where Web 2.0 falls into this. **Tim Dean** tries to cut through the hype.

The term Web 2.0 was coined not that long ago by Dale Dougherty of O'Reilly Media, and has been carried forth by a legion of Web evangelists ever since. It's not any one technology, as such, but a combination of technologies and new approaches to the Internet that make it a part of a different mindset from the Web as we know it. Web 2.0 is all about the difference between the Web as a bunch of interconnected but mainly static pages – a mere online extension of the old publishing paradigm – and the Web as a platform; a participatory and collaborative effort.

But before we delve into the abstract depths of Web 2.0, it'll be useful to place it in contrast to Web 1.0 so we can see some concrete examples of the concept in action.

Your father's World Wide Web

The Web 1.0, as it's being retroactively labelled, has always been interactive. Web pioneer, Tim

Berners-Lee, envisaged a fusion between the interconnected network of networks with the concept of hyperlinks, allowing a user to hop effortlessly from one destination to another.

However, the Web 1.0 consisted of discreet islands of content, packaged as a website, that were linked to other islands by hypertext bridges, but the content itself remained isolated. Early Web pages were also primarily non-interactive – they consisted of static pages that were to be read, but the reader couldn't affect the content themselves.

There was also the revolutionary promise of Web 1.0 that absolutely anyone with a simple PC and Internet connection could publish to the entire world – and it was virtually free. Oh, the liberation. And oh, the sheer number of rudely-coded Geocities personal homepages

Not your father's World Wide Web

Now we come to the concept of Web 2.0 itself. Instead of the old islands of discreet and non-interactive content, Web 2.0 is about networks of content, not just networks of websites. Furthermore, not only does the content span sites, but it's also fundamentally interactive.

RSS

▲ RSS feeds build on failed push technology to enhance Web 2.0.

'Microsoft could lose its platform edge if it continues to see the desktop as its primary focus, rather than the content that flows through it.'



▲ Wikipedia is an excellent example of the collaborative ethos that is fundamental to Web 2.0.

that followed. However, even this exercise in online democratisation resulted in a few hundred million isolated islands of information connected by links – still no real interaction.

In the days of Web 1.0, the browser was the battleground. Both Netscape and Microsoft fought to gain dominance of the browser market, in the hope that their client software would become the standard, and would channel developers and hosts their way to procure their server offerings. In the end, the browser just became a commodity, and the value wasn't in what it could do, but was in the content that flowed through it. Developers and content creators also embraced open standards rather than closed proprietary standards, which diminished the points of difference between browsers.

The Web did evolve, though. Firstly through the introduction of an element of dynamism via database back ends, CGI scripting and applets based on Java and ActiveX. Content Management Systems (CMSs) also replaced HTML editors for updating content. Finally, the traditional publishers made one last push (excuse the pun) to shoehorn their model online through 'push' technology. Not surprisingly, it failed. However, the interesting thing is, these three elements began the shift towards what we now call Web 2.0, but they needed a final push over the cliff in order to kick things over into the new web paradigm.

The best example of this is the blog phenomenon. Compare a blog to the old example of a personal Web page. A blog is still a single page and a single URL, but is totally dynamic, and is built to be frequently updated. It also encourages the reader to engage in a dialogue through comments. Blogs also frequently link to other blogs, creating a network of content that is in constant revision and is self-perpetuating.

The interaction of users is a critical aspect of Web 2.0. Websites that were able to engage users and draw some or all of their content from them proved to be remarkably sticky. An excellent example is one of the few dot.com giants that managed to survive and prosper into the Web 2.0 days: Amazon. There are plenty of bookstores that have online portals, with their entire catalogue there to search through, and with online commerce functions. But Amazon is the king of integrating user content as a value-add. Amazon's user reviews, lists and recommendations alone make it a valuable destination even if you're not going to buy anything. This kind of value add also gives Amazon a unique edge compared to its rivals.

When it comes to user interaction, possibly the flagship website is Wikipedia (www.wikipedia.com). The concept of having an encyclopaedia, an institution that is traditionally heavily regulated in principle, and opening up the content to whomever wishes to contribute, is revolutionary to say the least. It stems from the elementary principle of the 'wiki'. The wiki concept is all about collaborative authoring, or the 'bottom-upping' of content, rather than having it served to us users by a top down institution – the democratisation of information is another way to look at it.



▲ Google and Amazon are stalwarts in the Web 2.0 age.

While push technology failed, the idea of push has also come back in the Web 2.0 paradigm through syndication, primarily through RSS (Really Simple Syndication) and Atom. Syndication is different from push though, as the user maintains control over the content, and the users themselves can serve as well as receive – called many-to-many publishing – enhancing the collaborative philosophy of Web 2.0.

Making money with Google

Information management is a key feature of Web 2.0, and the hero in this case is clearly Google. Google's value is not in any one application or product, it's in its ability to manage information and turn it into something valuable to each individual user. This goes beyond the idea of a thinly customisable Web portal, as Yahoo! was working towards, and takes it to the next level. Google's true value is in its algorithms, its massive back end databasing capabilities, and its ability to dynamically adapt and deliver a range of services using this information. An example of this is Google News (news.google.com). Google News isn't a news agency itself, instead it pulls together the content from hundreds of disparate sources, and through a flick of Google's Gestalt wand, creates something far greater than the sum of its parts.

Google's AdSense is also a perfect example of advertising in Web 2.0 rather than the old DoubleClick model of Web 1.0. DoubleClick runs like a traditional media selling agency, and works with individual sites through contracts and agreements, and tailors its advertising based on the broad content of a site as a whole. Google's ad system is far more liberated. Google uses its information management might to tailor advertising to each and every page, and the site owner needn't involve themselves in much more than just subscribing to the service to reap the rewards. Google is also far more conscious



of user sensibilities, and rejects the attention-getting banners in favour of unintrusive text ads that are valuable because of their relevance, not their bright colours.

Raising the platform

These are some examples of Web 2.0 in action, or at least the early days of the Web 2.0 movement. What they all have in common is this principle of interaction with the user, collaboration, networks of content, and data plus data manipulation as the value in the back end.

One of the most important principles of Web 2.0 is the Web itself as a platform, rather than the PC or Windows as a platform, and the Web, or

Web browser, as just an application. Web 2.0, and its web-based services, are really independent of any one hardware or software platform, and they run equally well on Windows, Linux, OSX and (eventually) PDAs and phones. This fact should be of great concern to Microsoft, as it has flourished from holding a monopoly over the PC platform, but could lose its platform edge if it continues to see the desktop as its primary focus, rather than the content that flows

through it. Where Microsoft goes from here will be of great interest.

Ultimately it's questionable whether these not-insignificant shifts in online behaviour and Web development constitute a full incremental jump from Web '1.0' to '2.0'. However, it is clear that the Web is now, and is going to continually become, a very different beast. Furthermore, the scope of Web 2.0 really stretches beyond just the Web, including other devices such as TiVo, with its programme guide, recommendations, and Internet connectivity, or the iPod, with its alliance with iTunes and the iTunes Music Store. Perhaps the movement should be called Internet 2.0? We'll leave that decision to the hyperbolically-gifted Web evangelists.

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The Investigator

Has your online Christmas shopping caused your grief? **David Hellaby** looks at what recourse you have if your online purchase went awry.

There are few things more frustrating than finding that the carefully planned gift you had ordered for a loved one hasn't arrived; has arrived damaged, or is nothing like the image or description you saw online.

However, worse things can happen. For example the expensive gift you bought overseas because it was so much cheaper, ends up costing the recipient more than the gift itself because it is subject to customs duty. Or you suddenly find your credit card has been debited with a lot more than you expect or has been maxed out because someone has stolen the number and gone on a spending spree.

These are annual problems and ones that are growing as the number of people shopping

'[Online stores] are subject to the same fair trading and privacy laws as any physical store.'

online increases.

The Internet is the world's biggest shopping mall, but it has its pitfalls.

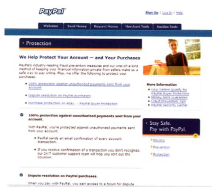
Most of them can be avoided by shopping within Australia or only buying from well-known overseas sites with good reputations and a phone number and physical address posted on their website.

HERE TO HELP

We welcome consumer complaints and questions, and we'll do our best to help find a solution for all parties involved. If you're the victim of poor sales, dodgy service or any other kind of dispute, we need to hear about it. If you'd like our help, email us at: investigator@pcauthority.com.au.

Please note that the companies or individuals mentioned here are meant to illustrate the typical problems that an ordinary consumer could face. If a company is mentioned here it should not be taken as an indication that incidents described are typical of that particular company.

Please don't use the PC Authority or The Investigator name as leverage to get more than you are entitled to.



▲ Both PayPal and Ebay offer detailed descriptions of their protection programs online.

Foreign sites are not subject to Australian consumer law and are generally out of reach of Australian authorities. Having to go through the authorities in their country of origin can be a difficult process.

But if you have a problem with a purchase from an Australian online retailer you have the same recourse as you would if you went into any shop. They are subject to the same fair trading and privacy laws as any physical store.

However, you need to be aware of their returns, delivery and privacy policies and should always print out a copy of the online transaction in case of dispute at a later date.

If you have a problem with non-delivery or faulty or damaged goods you need to take it up with them first. Contact the online retailer and attempt to rectify the situation.

If the matter is still unresolved contact your local office of fair trading.

If you find the amount charged to your credit card is higher than you expected, first check that there are no unexpected delivery charges. You might be able to get a refund if the charges are not clearly spelled out on the website.

Foreign sites often list prices in US dollars so make sure the added charge is not caused by the foreign exchange rate.

If there are unexplained charges on your credit card, notify your credit card company immediately. Usually, your liability for fraudulent transactions on your card is limited to \$50 and most credit card companies are very good at spotting unusual activity. So don't be surprised if after making a purchase on a foreign website your credit card company calls you to verify the purchase.

Finally, there is one trap for the unwary big spender hoping to cash in on foreign deals that you have no recourse for – customs duty.

If you spend more than \$1000 on an item or attempt to bring in more than \$1000 worth of

goods in one shipment or post, without declaring the value on the customs declaration you will be subject to duty on the entire purchase price, not just the amount over the \$1000 threshold – and that can be expensive.

GOING, GOING... GONE

Due to the perceived anonymity of online auctions, many buyers come to grief. These usually take two forms: the item didn't arrive, or it arrived different from the advertised description.

Often the quickest way to resolve these disputes is to contact the seller directly. First, ensure that the money has actually been accepted from the credit card or PayPal account. If the seller has conducted many transactions and has a good feedback rating, they'll be less likely to try and scam you for a small purchase.

If you don't get anywhere here, contact the auction site directly. www.ebay.com.au offers a Standard Purchase Protection Program which will offer a maximum reimbursement of \$375. To be eligible, the final bid must be over \$25, you must not have exceeded three claims in a year, you and the seller must have at least a 'zero' feedback rating or greater, and you must have contacted your credit card issuer. PayPal users may also benefit from Buyer Protection, which provides coverage up to \$1500 when buying from a qualified seller.

For more information, head to <http://pages.ebay.com.au/help/>.

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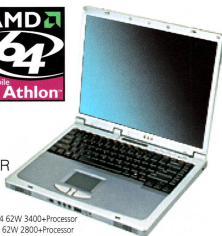
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Inbox

Got something to say? If you have a good story, an amusing anecdote or a tale of woe, we want to hear it!

MORE LINUX

A recent open letter from US computer security expert Dr Daniel Geer to Massachusetts Senator Pacheco (<http://tinyurl.com/cb8nt>) stated something incredible: 'There is a new Windows virus every four hours. Perhaps 15% of all desktop Windows computers are running malware of some sort...'

What needs to be understood is that Dr Geer is one of the very few people in the world who is actually qualified to make such a statement. Since we can assume Dr Geer's statement is accurate, the situation is reduced to essentials: If they are unprotected by antiviral software, computers running the Microsoft Windows operating

system are essentially virus incubators and they are made so by the structure of the software they are running.

Contrast this with my own Linux operating system. It uses no antiviral software and it is almost impossible to infect Linux with a self propagating virus because of its inherently secure software structure.

I continue to plead with PC Authority to take a more responsible stance with respect to promoting Linux. The occasional article and the

two pages at the back of the magazine are quite insufficient.

PC Authority needs to tell the average user the truth - that Linux has a similarly powerful mouse based interface, that Linux is now taught

routinely in overseas school rooms and that it is generally simpler to install on a desktop computer than Windows itself - and far cheaper. Children find no problems with using Linux... yet we continue to push the idea that adults cannot handle it.

Come on PC Authority, start to dedicate serious, consistent and constant

have security to gain and viruses/malware to lose.

T Young

David Kidd replies:

Our editorial is geared towards Windows, simply because most of us use it. We truthfully acknowledge the benefits of Linux (some of which you mentioned here) as well as its drawbacks, of which there many. As always, I put the call out to readers - do you want to see more Linux content in PC Authority?

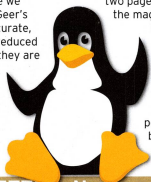
'Children find no problems with using Linux... yet we continue to push the idea that adults cannot handle it.'

promotion of the Linux operating system. I realise the majority of users are still 'hooked' on Windows and the magazine must offer suitable material for your readers, but your 'force feeding' of Windows material almost exclusively only aggravates the problem. By promoting wider use of Linux on the desktop, your users at least

ROOTKIT RAISES HACKLES

I have just been reading an article on the Sony BMG rootkit. This story has raised my hackles, that a company like Sony can stoop so low to protect its hip pocket. Then I started to think, they are not the only ones.

What is it with these 'giants of the industry' that they



STAR LETTER: No cause for alarm

Instead of blaming ZoneAlarm and Davey Winder, perhaps M Cooper (December Inbox) might ask what badly written game, or other Internet freebie has disabled his or her computer? Commercial software is designed to function correctly on a standard operating system. If it doesn't run on yours, then the OS is corrupted.

The solution is simple. Backup your data, partition the disk, reinstall Windows from scratch, update on the MS site, and burn a clean image of the C: drive to DVD using D17 or Ghost. This clean system image can be reinstalled at any future time

in less than three minutes. Now install ZA6 (four minutes!), prove to yourself that it functions perfectly, and breathe an apology to Mr Winder.

Lard up your computer with whatever other software you use, burning more images as you go, directing all your data to D:, E:, etc. At some stage something will corrupt your Registry, or the OS files, so jump on the 'net, and tell others what it is that may also be disabling their computer. Replace the latest image from DVD, and you again have a non-corrupted working computer. How easy is that?

P Beenham



This month's winner takes home a Logitech Cordless Desktop MX 3000 Laser worth \$179.95. The keyboard and mouse combo gives you accuracy and comfort, including sleek media and document navigation controls, and instant image zoom. Moreover, advanced power management means ultra-long battery life, while SecureConnect technology creates premium wireless performance.

Pine scent not included



In today's environmentally-conscious world, the P150 Quiet PC Case establishes a new benchmark in computer cases. Designed around the highly-efficient Neo HE 430-Watt power supply, the P150 draws less power and reduces the impact your computer has on the power grid. A gleaming snow white finish and innovative Quiet Computing technologies round out the package, making your computer whisper-quiet and unobtrusive. Throw in some pine-scented air freshener and you might even forget you're at the office — it will give a whole new meaning to "computing environment".

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WHAT'S HOT 2006

What will you be buying, using and drooling over this year?
Tim Dean looks at the products and technologies
due to hit in the next 12 months.

It could be said that the technology industry counts its life in dog years. One year in IT is like seven years of progress rolled into one compared to just about any other industry. Toaster manufacturers must be lividly envious.

2006 should prove to be a particularly monumental year in tech, with several broad technology streams finally galvanising and starting to deliver on the abstract promises they made a few years ago. Convergence, ubiquitous connectivity, virtualisation, Web 2.0; 2006 will become known as the year when technology came together.

In this feature we'll take a look at what we can expect from the world of tech this year, what technologies and products we expect to be big, and how they will impact our lives. By all accounts, 2006 is set to be an exciting year for technology and will truly herald a new generation of computing.

THE STORY SO FAR

This isn't to say 2005 wasn't also a big year for tech, although it will more likely be remembered for the foundations it laid for the

future of technology, rather than for any particular breakthroughs that happened during the year.

Probably the biggest developments in technology in 2005 happened online. Google was the company leading the way, pioneering a range of online services that saw the concept of 'Web services' actually bare fruit. 'Podcast' was also named word of the year by the American Oxford dictionary, showing the prevalence of tech buzzwords in mainstream language. Blogs also came into mainstream awareness, with them replacing the old Geocities home page as people's individual portal, and contribution, to cyberspace.

On the PC front, 2005 was significant because of the introduction of two new technologies that fundamentally take PC performance into a new era. The first is 64-bit, which has actually been with us for a while with AMD's Athlon 64 range of processors, but was introduced into



▲ Notebooks in 2006 will be getting both bigger and smaller. Toshiba's Qosmio represents the top of the line mobile Media Centre.

Intel's line through the EM64T extensions, making it more or less the standard across the spectrum of high-end desktop processors. The second major development was the introduction of dual core CPUs, which marks a shift away from the old paradigm of higher and higher frequency single core processors.



◀ **Intel's Viiv: the Centrino of Media Centers.** Viiv should encourage more small and slick Media Centers in 2006.

PVRs (Personal Video Recorders) also had a decent year, although the lack of an integrated and open EPG (electronic programme guide) continued to put the breaks on PVR uptake. Windows Media Center also had a mediocre year, but the concept of convergence was beginning to catch on, especially as demonstrated by devices such as the Sonos Digital Music System.

2005 was also the year when flat screen televisions truly became a viable, and affordable, alternative to regular CRTs. Capping off a big year for flat screen TVs was Acer's impressive 32-inch widescreen high definition LCD,

which can be found for the unprecedented price of under \$2000.

Sadly, it wasn't all good news for technology in 2005. The year was also the biggest ever in terms of security threats, with a 48 percent increase in new malware threats, and a staggering one in every 44 emails carrying a virus, according to the Sophos Security Threat Management Report 2005.

2005 laid the foundations for the future, with things such as Google's Web services, multicore processors, the 3G networks and digital television.

Other PC technologies also matured into mainstream use, such as Serial ATA, DDR-2 RAM, PCI Express and DVI connectors for flat screen displays. However, on the software front, 2005 was a relatively quiet year, notable for its lack of major desktop releases by Microsoft – not even a Service Pack for Windows XP in 2005. That's not to say a number of significant products and updates didn't enter the market, possibly the most notable being Adobe's Creative Suite 2 bundles, which include elements from Macromedia, which Adobe acquired early in 2005.

2005 also saw two new players enter the 3G market: Vodafone and Optus. Both kicked off their new networks with a range of new services, including video calls, games and music downloads. Telstra also entered the wireless broadband market using its 3G network as the backbone, and extending wireless broadband coverage beyond the bounds of Sydney and Melbourne, which are serviced to varying degrees by Unwired and iBurst.

ADSL2 also generated quite a bit of interest, with ISPs such as Internode and iiNet blowing Telstra's 1.5Mbit ADSL limit out of the water by offering speeds of up to 12Mbit over conventional copper.

Portable music players, and the iPod in particular, also had a big year, with Apple's range continuing to dominate. That leadership was further helped by the much anticipated launch of the iTunes Music Store here in Australia, which dramatically increased the levels of competition amongst online music stores. The legal download sites arguably also received a boost from the continued and very public court cases against peer to peer file sharing companies. Kazaa came under fire here in Australia, and WinMX closed its network entirely (although a quick hack to your 'hosts' file can open it back up again).

Digital television also started to make an impact in 2005, after several years of very slow uptake. Digital set top boxes reached a new low in prices, getting down below the \$100 mark. It was also a big year for high definition content, with many of the most popular US shows, such as *Desperate Housewives* and *Lost*, being broadcast in HD.

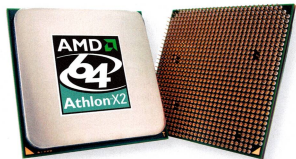
'2005 laid the foundations for the future, with innovations like Google's Web services, multicore processors, 3G networks and digital television.'

However, it's 2006 that will bring these disparate elements together into whole Gestalt entities under the broad banner of convergence.

THE PC IS NOT DEAD

While other technologies and devices may have grabbed the limelight over the past few years, the PC is still very much at the centre of the digital world. Desktop PCs continue to sell more and more each year, with research firms IDC and Gartner predicting growth figures of

▶ **Both AMD and Intel have dual core processors on the market already. By the end of 2006, a majority of new PCs will pack dual core CPUs.**



Laura Yecies
General Manager,
Zone Labs
Vice President,
Check Point

'The Internet is becoming increasingly dangerous every day. We believe the firewall is the single most critical component of PC security. As hackers become savvier and compromised PCs become a commodity with monetary value on the black market, consumers must use a solution that can proactively block threats, not just clean them up after the damage is done. Armed with the right information and proper security, people can defend the integrity of the Internet and defeat those who would exploit it for criminal purposes.'

**Tim O'Keefe**

Principal
Consultant
Digital
Broadcasting
Australia

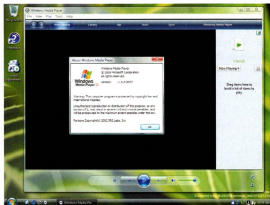
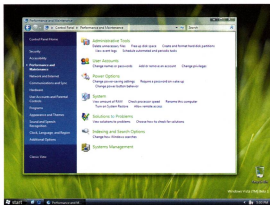
'2006 is about sport on television: Australian Open Tennis (January); Torino Olympic Winter Games (February); Commonwealth Games (March); FIFA World Cup (June); and the AFL and NRL football finals (September). So in 2006 digital television will be about viewing sport - with crystal clear images and sound - how you want it (on your large flat panel high definition screen), when you want it (recorded on to your PVR, your laptop, your desktop or your media player) or where you want it (on your mobile phone or super light portable television).'

Security in 2006

If 2004 was the Year of the Worm, and 2005 was the Year of Phishing, then 2006 is shaping up to be the Year of the Trojan. An alarming new trend in 2005 was for mass Trojan infections that turn the victims' computers into zombies, which can then be used to distribute spam or perform denial of service attacks. Trojans are also increasingly financially motivated, with them opening back doors or stealing passwords for online banking. The number of Trojans being released is also troubling, with more Trojans being distributed than worms in 2005, according to Sophos' Security Threat Management Report. According to Laura Yecies, general manager at Zone Labs and vice

president at Check Point, another disturbing trend is for financially motivated attacks to be more surreptitious in order to avoid attention from the authorities. "Hackers are no longer focused on garnering headlines with large scale attacks, rather they seek to profit from their victims."

Spyware is also a constant bane, although new laws and improved antispymware software integrated with antivirus is starting to have an effect. However, according to Sophos' report, as automated security is improved, and vulnerabilities patched, hackers will have to resort to social engineering to penetrate our defences.



▲ The current beta of Vista has a similar interface to Windows XP, although note the new Web-type search and interface buttons.

between five and 10 percent in 2006. However, it's mobile PCs that are leading the charge, with growth figures of notebooks in 2005 and 2006 expected to be in double digit region, possibly even getting towards the 20 percent mark. In fact, Mark Whittard, general manager of Toshiba in Australia, is going so far as to predict that one in every two PCs sold here in 2006 will be a notebook. That's a bold claim - even IDC doesn't think notebooks will take up 50 percent of sales until 2008 - but it's conceivable.

One of the driving factors behind the soaring notebook sales is the dramatic price drops we've seen throughout 2005, which should continue into 2006. The main reason for this is the global glut of LCD panels, which are the most expensive component in most notebooks. 2005 saw the first (decent) sub-\$1000 notebooks hit the market, and we can expect to see more of the same in 2006, although don't expect the price to get much lower than about \$750 this year.

Inside the box, the multicore revolution (if you'll excuse the hyperbole) will continue in 2006. This is not just a small shift in processor technology, it actually represents a substantial shift in the way we think about performance. Raw megahertz have long been losing favour as

a primary metric of performance, and processor manufacturers have been struggling to keep their frequencies up in the face of massive architectural and engineering barriers. The move to multicore processors marks a shift from the old high-speed, single threaded, serial approach to a parallel, multithreaded approach.

Combined with 64-bit extensions, which at this stage mainly allow for more than 4GB of RAM to be used in a desktop PC, we can expect to see more software actively take advantage of multithreading. Besides highly demanding applications, such as multimedia authoring and 3D games, the main area multithreading will have an effect is with the operating system. Windows XP is already multithreaded, as will be Windows Vista.

Also on the processor front, the other major event we'll see this year is the first Apple computers to feature an Intel chip inside. Yes, hell hath frozen over. The significance of this event is not yet fully known, as it's uncertain how Apple will port OS X to the Intel architecture, and whether there'll be other Mac/Intel crossovers. But it should be interesting to watch it all unfold.

Heat and power consumption are the other major factors influencing processor design in 2006, with both AMD and Intel bringing their power

management features from their mobile processors into their desktop CPUs. Intel will also continue to shrink its chips down to the 65nm process, while AMD is struggling to move on from 90nm.

With multicore processors increasing in popularity, virtualisation also becomes a viable reality. Enterprise will be the big beneficiary of virtualisation in 2006, although we'll start hearing talk of desktop applications when Vista arrives.

Another significant PC event in 2006 will be the launch of Intel's digital home platform, the Viiv (rhymes with 'jive'), which is expected to arrive early this year. Viiv is best thought of as the Media Center equivalent of Centrino, and constitutes a coherent platform of Intel hardware and drivers that should make Media Center PCs a bit more focused in their approach on the living room environment. It's unlikely that Viiv will make a big impact early on, but it could make a big difference to Media Center's popularity, which has so far been



◀ The PlayStation 3 should be available here some time in the second half of 2006, although how many games will be around then is uncertain.

If all goes well, we should see Vista around the end of the year. It'll have been five years since the last major release of an OS platform from Microsoft, and by all accounts, Vista should be a great leap forward. Microsoft has really engineered Vista from the ground up, and rewritten a lot of the rules that set the standard for the likes of Windows 9x and Windows XP.

Vista will not only have an entirely different look or feel from any previous Microsoft OS, it will have an entirely new approach to the interface. XML, meta data, desktop search and RSS will all be integral parts of the OS – and if it sounds like a sophisticated Web-based interface, you're not far wrong. Microsoft has acknowledged many of the strengths of the Web, and the tools we're using to access the wealth of information on it, and is using



Ian Lowe
Group Marketing
Manager, Home
Network Products
Sony Australia

'With the recent evolution of LCD into a mass market consumer product across a wide range of screen sizes, we may just about see the end of the venerable old TV tube. There is also lots of sport to come in 2006 so how do I get to see it all? PVR hard disk based recorders with digital tuners for saving every single shot, play, gambit, brawl, penalty, fumble and refereeing mistake – in glorious HD quality. PlayStation 3 – come on, it has to be the thing everyone is hanging for – HD output, Cell processor, wireless everything, online game play, looks great and it's got a Blu-ray player built in.'

'Microsoft has really engineered Vista from the ground up, and rewritten a lot of the rules that set the standard for the likes of Windows 9x and XP.'

hampered by big ugly boxes, high prices and a lack of an EPC (which we'll talk about shortly).

VIEW AHEAD

Undoubtedly the biggest event in the PC world in 2006 will be the launch of Microsoft's next generation operating system: Windows Vista.

DVD wars

We won't see the conclusion of the high definition DVD wars in 2006, but we will see the conflict between rival formats reach fever pitch. The first HD-DVD players and discs are set to ship in early 2006, which is later than Toshiba had hoped. Blu-ray will also see its first widespread distribution in 2006, and will be helped along by the PlayStation 3, which uses Blu-ray discs for its games.

It's likely both formats will coexist for Samsung, planning to produce dual format players. Which format comes out on top will depend on where the studios place their allegiance, and that will depend on which format consumers favour. Ultimately it could come down to price taking precedence over capacity, which could give dual-layer HD-DVD the edge by the end of 2006.

these same tools to make finding content on our desktops easier. Expect to see improved security as well, including integrated antivirus and antispyware as well. Whether the funky filesystem, WinFS, makes it into Vista is still a matter of rumour and speculation, although it's unlikely.

Vista will ship in a number of different versions, all of which (except for the possible 'Starter Edition' for 'emerging markets') should be natively 64-bit. The higher-end versions should also feature Media Center functionality built in, although it's likely a specialised dedicated Media Center version will be developed for pure living room systems.

Vista won't only make a big impact on the OS and software world, but it should have a reverberating impact on the hardware world as well. Vista's hardware requirements are nothing short of spectacular, with it needing a fairly powerful DirectX 9 graphics card with 128MB of memory onboard, as well as a hefty 2-3GHz CPU, preferably 64-bit, and at least a half gig of RAM. Given that Vista should be arriving at a lull in the PC buying cycle, it could actually spark off another hardware peak as we all upgrade our systems over the 12 months from Vista's launch.

▼ The Xbox 360 has benefited from an earlier launch than the PlayStation 3, but it's still anyone's game in this competitive market.





Michael Malone
Managing
Director
iiNet

'I think the best technology in 2006 will be Voice over IP. While it's been around for a long time, it's now getting easy enough for everyone to use, and it will fundamentally change the cost of communications in the next year. High speed broadband also opens up the opportunity for video over your Internet connection. I don't think 2006 is going to see IPTV take off in a big way. We'll see some experiments from iiNet, Foxtel, Adam, BigPond Movies, and possibly others. But it's setting the platform for some big changes in 2007.'

FUN AND GAMES

Talking about cycles, 2006 will see the major console vendors refresh their range. Microsoft's Xbox 360 is already helping people blow stuff up across the US, Europe and Japan. We'll see it out here in early March.

One benefit of the Xbox 360 getting to us a few months after the rest of the world is that we should have a greater range of games than our foreign gaming brethren had at launch. The early games on the Xbox 360 also don't appear to be using anywhere near the massive computing and rendering potential of the console, so there's plenty of performance headspace for games to expand into over time.

One interesting facet of the Xbox 360 is its interaction with Windows Media Center, with the console acting as a media extender. Media extenders have been around for a while overseas, and essentially let your Media Center PC act as a media server, with the extender becoming something of a thin client. Incorporating this functionality into the console, so there's plenty of performance headspace for games to expand into over time.

PC. The Xbox 360's high definition output will also make it a natural partner for flat panel televisions.

The Xbox 360 will be going head to head with Sony's next generation console, the PlayStation 3 (PS3), which should arrive some time mid year. The PS3 in an interesting beast, powered by a fairly revolutionary processor, Cell. The Cell processor is actually nine cores in one (although there's been speculation that the PS3 may ship with up to one core non-functioning).

Cell is actually part of a bigger picture digital home future, with Cell processors populating, and communicating with, devices all around the home. Until more devices arrive that are powered by the Cell, this will remain science fiction – and it could remain so for



▲ Smart phones are getting smarter and smaller, as evidenced by the new O2 Xda Atom.

quite some time. Cell does have a lot of potential as a processor, although developers will have to learn an entirely new way of coding in order to take full advantage of it. As such, expect a relatively limited number of full power PS3 launch titles, but that's okay; as the PS3 should be backwards compatible with games from the PS2 and PS1.

How the PS3 will compete with the Xbox 360 remains to be seen, although we can expect the battle for our hearts, minds and wallets to be intense.

The third console in the mix is Nintendo's Revolution, although it may well have a different name at launch. Nintendo has been remarkably close-lipped about the Revolution, and speculation is rife. The general feeling, though, is that if Nintendo had something interesting to say, it would have said it by now, rather than hide behind the premise of 'protecting its ideas from its competitors' – not that Microsoft or Sony could change their consoles much if Nintendo did release all the details of the Revolution today. When the Revolution hits the streets is anyone's guess, although it's looking increasingly unlikely to be in 2006.

WIRES AND WIRELESS

Broadband was relatively slow to take off in Australia, but 2004-2005 saw the number of connections double to well over two million today. 2006 should see similar pace of broadband uptake, with it primarily eating away at the existing dial-up install base in homes and business. ADSL still takes the lion's share of connections, although wireless broadband is also on the up. Now that telcos are starting to open up their 3G networks to operate as wireless data services, they will also enable more people in non-metropolitan areas to get connected to broadband.

2005 saw ADSL2/2+ begin its rollout around Australia, surprising many with its high speeds of up to 24Mbit over the same old copper wires that Telstra staunchly insists are capped to 1.5Mbit. Having said that, 24Mbit is the maximum theoretical speed that would only be achievable if your ISP supported it, and you had your ADSL modem about three feet from the DSLAM at your local exchange. Speeds of up

2007 and beyond

2007 should see a continuation of many of the trends from 2006. Windows Vista should kick off a new hardware upgrade cycle for PCs. We'll also get our first multicore processors, with four or more cores on each chip, and 64-bit will be ubiquitous from entry-level to high-end.

In the home, digital television, especially high definition, should slowly gain some more acceptance in the mainstream. Flat screen television prices should also drop, with 30-40in widescreen high definition screens popping up in living rooms around

Australia. Home automation will also begin to make its mark, with new houses being built with digital technologies in mind.

VoIP will also continue its surge in popularity, with more big telcos and ISPs offering services. Telstra should also be making its revolutionary transition to its data/VoIP-based network as well. WiMax wireless broadband should also finally become a reality, with rollouts taking place around the world. Local wireless broadband company, Unwired, could also upgrade its network to be WiMax compatible around 2007.

NAVMAN

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PiN 570 – portable in-car navigation

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to 6-8Mbit are more like the practical maximum for most people.

2006 should see a continued rollout of ADSL2+/2+ hardware into exchanges around Australia, and more pressure on Telstra to finally unshackle its own network, much of which is ADSL2-ready anyway. That's good news for us, as the broadband market becomes more competitive, and prices drop even further.

On the mobile front, 3G will be the new battleground, with the four 3G-enabled carriers all competing for our attention by offering more and varied content on their networks, as well as expanding coverage over 2006. Telcos and content companies alike see mobiles as the new wonder platform for selling music, videos and games, but how much appeal this will have to mobile phone users over the age of 25 remains to be seen. Video calls are also terribly overrated, and their appeal will also be limited to enthusiasts. Even so, data on your mobile will be a big theme of 2006.

Regardless of the connection, our phones will also be getting smarter in 2006. Expect to see more hybrids, such as O2's Xda Atom, and more phones with organisers that actually work.

TALKING DATA

2005 could well be remembered as the year that VoIP was talked *about* more than it was talked *over*. 2006 should see the tide start to turn for VoIP as more small vendors and ISPs offer home VoIP services at prices that will be too low to ignore. More of us will become accustomed to the idea of having an entry-level conventional phone plan, along with a high-speed ADSL connection and a VoIP handset.

Wireless world

Less cables, more bandwidth will become a big theme of 2006 and beyond. At the smallest level, UWB (Ultra Wideband) will cover ranges of only a metre or two, but will provide very high bandwidth. It will also provide the basis of the upcoming Wireless USB standard, and will replace cables between your PC and other peripherals. The first UWB devices should arrive in late 2006, although it'll be 2007 before it becomes widespread.

2006 should also finally see the highly anticipated release of the official 802.11n Wi-Fi standard, which uses MIMO (Multiple Input Multiple Output) to boost throughput to around 10 times that of 802.11g.

3G and wireless broadband will also continue to grow in popularity in 2006 and beyond. WiMax technology is already being rolled out overseas, and we could see it competing with upgraded 3G mobile data networks in 2007.



◀ Skype is more popular than ever, but it's non-Internet based VoIP phones that will gain the most attention this year.



◀ Instant messaging is evolving into a complex communications system, with email and voice becoming standard features.



Warren Hardy
Acting Managing Director
Optus Consumer

VoIP will also increase in popularity in another manner – via instant messaging (IM). Skype has already enjoyed tremendous popularity, but now that Windows Messenger, Yahoo! and Google's Talk all feature VoIP, IM could well shave a few bucks off our phone bills. Business will also have to get used to this phenomenon, just as it's still getting used to the concept of IM in the office. The important message for business is if implemented and managed right, with the correct standards put in place, IM and simple VoIP services can improve internal communications and lower costs. Still, it'll probably be 2007 before they get the message (no pun intended).

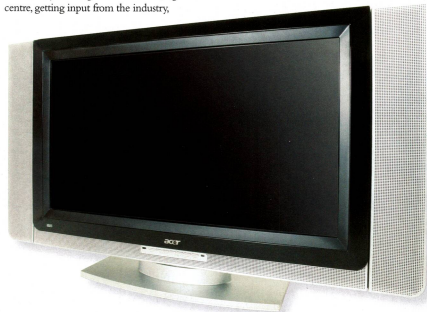
GIVE US A HUB

Digital television, PVRs and flat screen TVs were all popular in 2005, and will continue to grow through 2006. In fact, 2006 could see flat screen TVs outsell CRTs for the first time. Both LCD and plasma will see huge popularity, although as LCD technology matures and becomes suitable for bigger screens, it'll slowly eat into plasma's territory, especially around the 30-40 inch range. OLED (Organic Light Emitting Diode) technology should also begin to make its way into more products in 2006 as well, although it'll remain expensive for a while yet.

On the digital television front, the government is frantically running committees left, right and centre, getting input from the industry,

▶ Acer's AT3201W is remarkable for being large, high definition and less than \$2000. Expect to see even more large flat screen TVs drop in price in 2006.

'This is an incredibly exciting time to be in the IT and telecommunications industry – wireless technologies are really taking off and with increasing broadband penetration we are on the brink of true convergence. The mobile phone, television and PC are slowly rolling into one. In this fiercely competitive industry it is a great time to be a consumer.'





Radeon X1800 SERIES

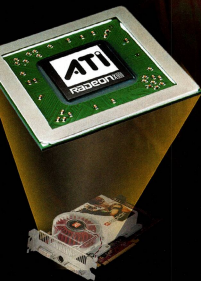
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Radeon X1800

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Radeon X1800

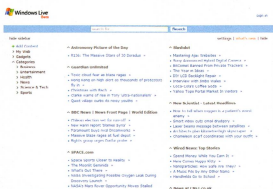


Radeon X1800

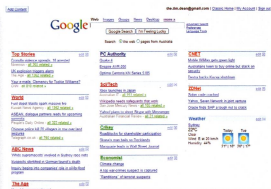


Paul Ducklin
Head of
Technology, Asia
Pacific
Sophos

'In 2006, it seems likely (if you will pardon the cliché) that 'less will be more'. By this, I mean that we can expect increasingly focused attacks, in which people are targeted for specific criminal purposes, rather than blatted en masse in the fashion of viruses like Melissa, Lovebug, Nimda, Sasser and Slammer. Of course, in the short term I suspect that we will continue to see malware both from the old school virus writers, showing off to their imaginary friends, and from the new school of organised criminals, who are in it for the money. In the longer term, though, it would be nice to think that the increased attention of law enforcement will at least serve to discourage youngsters from getting into virus writing.'



▲ The Windows Live site is taking a stab at offering a single customisable portal to the Internet.



▲ Google's customisable home page is still in its early days, but expect it to boom in 2006.

consumers and television networks as to why digital is so slow taking off. Sadly, the government will likely ignore all advice except that given by the big networks, and as such, we'll still be deprived of an EPG (Electronic Programme Guide). Thankfully, third party offerings, such as IceTV (www.icetv.com.au) do exist, but you have to pay for the privilege of using them. Whether the government wakes up and realises it has to mandate an independently administered data-based EPG, remains to be seen.

Even so, STB (Set Top Box) pricing shouldn't be a barrier to getting into digital television, with many SD (Standard Definition) STBs now available for under \$100, although they're unlikely to get any cheaper. HD (High Definition) STBs are still relatively expensive, although prices should drop considerably this year.

Even without an EPG, PVRs are still the way of the future for watching television. Let's face it, VCRs are just so 20th century. PVRs should enjoy considerable popularity in 2006, especially when coupled to a DVD burner. Dual SD digital tuner models should become the standard by the end of 2006, with single and dual tuner HD PVRs starting to appear in greater numbers as well.

ONLINE

Google was the champion of online services in 2005, and it should continue to lead the way in 2006, despite Microsoft's desperate and innovative attempts to compete.

Three other buzzwords that are being thrown around willy nilly at the moment, but will have tremendous significance in 2006 are podcasts, blogs and wikis. These three terms, along with Google's work, as well as a host of technologies such as RSS and Ajax, will herald in the era of Web 2.0 (see Tech Horizons, p16). The Web as a platform is what it's all about, and we can expect to see a great deal of hype, and the possibility of another hyperbole-fuelled dot.com gold rush, although speculators will be far more cautious about the lofty claims this time around.

Desktop search will be another big theme of 2006, and Google and Microsoft will fight tooth and nail to integrate into your desktop and provide you with an all-in-one portal. Until Vista is released, Google should comfortably hold the lead.

2006 will also see legal downloads of music, television and movies become a mainstream concept, lead, of course, by iTunes. Despite its proprietary DRM, iTunes and Apple will continue to push the iPod to new heights, and until someone else delivers an end-to-end system of a similar nature, Apple should still maintain the lead. While it's unlikely that TV will be offered at anything greater than iPod video resolution, it should at least switch studio thinking has to the theme of downloadable content, and the potential to go direct to the end user and make a lot more profit. Telcos will commandeer this concept for mobile phones, but that's only the beginning of the possibilities for digital content delivered online. We won't see the end, or the beginning, of this phenomenon in 2006, but it should get the ball rolling for digital downloads in years to come.

COME TOGETHER

As you can see, there's no shortage of big movements in technology in 2006, but the overriding theme for the year will be convergence. This won't necessarily just mean convergence in the digital home, or mobile telephony with data, or the Web as a platform – all these areas will experience convergence this year. The cheeky fact is all these models of convergence also rely on that humblest of protocols, IP, so the even bigger picture convergence of all these arenas into one is only a matter of time.

It's also a fact that the tech world will be very different at the end of 2006 than it was at the beginning. By January 2007, we could well have 64-bit multi core CPUs, running Windows Vista, communicating with our Xbox 360, which is outputting to our high definition flat screen TV, on which we'll be shopping through Google and interacting with our mobile phones.

If 2005 was an eventful year for technology, 2006 will be monumental.

What do you think?

What products and technologies do you think will make it this year?
Let us know at
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In The Labs

Want the best advice on what to buy?
Check out what's been through our Labs this month.



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How We Test

Our new benchmarking tests are the best in the business. Read on to find how they work...

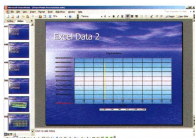
2D BENCHMARKS

PC Authority's exclusive set of custom-designed benchmarks are based upon real-world, industry-standard applications. We run scripts to give each program a set amount of work and measure, to the nearest one-hundredth of a second, how long it takes to complete the task. We reboot between tests to prevent any caching.

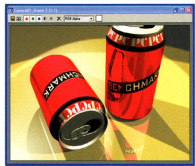
Not only does this reflect actual performance as meaningfully as possible, it's done to a level of plus or minus 0.5 percent accuracy, putting other benchmarks to shame. They're also the only benchmarks which can convey the multitasking and encoding benefits of dual-core processors.

We divide the tests into four categories to reflect real-world usage: Office, 2D Graphics, Encoding and Multitasking. We use Microsoft Office, Adobe Photoshop, CorelDRAW, Discreet 3ds Max, Canopus ProCoder and Illustrate dBpowerAMP to test a system

We record the time taken to complete each test and, using our Pentium D test rig as a baseline, calculate a relative score. So, a machine scoring 1.50 is 50 percent faster than our reference machine. The overall benchmark score is an average of each category.



▲ The office test uses Microsoft Office 2003, with a number of tasks in Access, Word, Excel and PowerPoint.



▲ A complex scene in 3ds Max 7 measures a machine's computational performance.



▲ Encoding two streams of video simultaneously makes use of Canopus ProCoder's multithreading.



▲ Turning on HDR lighting in Far Cry makes the graphics better yet.

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View from the labs

Peace at last.

It's been manic for the past few months with many graphics cards hitting the Labs. It's not just been the frantic phone calls to get stuff in before anyone else, but the sheer number of new chipsets. We've had a mini graphics card group test practically every issue for the past four months what with NVIDIA's new 7800 GT and 6800 GS cards and ATI's X800 GT, GTO and X1000 series (not to mention CrossFire). Now everything is out and, it seems, at every \$5 increment there's a different flavour of chipset available for you. And yet we're talking RRP.

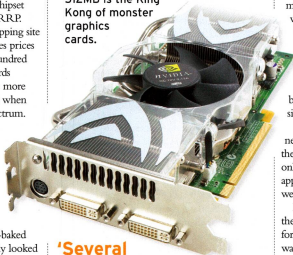
A quick look on PC Authority's Shopping site (www.pcauthority.com.au/shopping) sees prices for the same cards regularly vary by a hundred dollars while different manufacturer's cards (staying within the same chipset) can be more than \$300 different to their competitors when looking at the expensive end of the spectrum. Feel free to hide from it all safely with our A-List choices if you haven't a clue which way to turn.

But it's all over now. At first it looked like NVIDIA had won hands down; being first to market with its new 7800 cards and with SLI already mature in the market place. This was only helped by ATI releasing a half-baked CrossFire competitor which immediately looked old. But then the X1800s started appearing. First the X1800 XL's started to appear and threatened NVIDIA's 7800 GT sweet-spot price point. And then the X1800 XT came along and just managed to topple the 7800 GTX. However, NVIDIA had a card up its sleeve. It had been holding off on releasing a faster clocked 7800 GTX – purely because it hadn't needed to up to this point. Now it has (see page 48) it holds the bragging rights to the fastest card on the market (a title which gives kudos more than profit – how many people can afford to splash out \$900 graphics card?)

It's all been quite a soap opera but ultimately NVIDIA wins this round. ATI looked dead and buried at one point but closed the gap considerably towards the end. At least ATI has done enough to show its staying power – at one point we feared for the company's very existence, things looked so bleak.

But the future is tricky to see. Already games

▼ **NVIDIA's new 7800 GTX 512MB is the King Kong of monster graphics cards.**



'Several months ago people were saying NVIDIA were in trouble'

like Call of Duty 2, Quake 4 and above all, F.E.A.R. have appeared which can't be played at 1600 x 1200 without dropping the detail, effects and anti aliasing down. Very high-end gamers (with very, very large pockets) can buy two very high-end cards and connect them to make them playable. SLI is mature and simply requires

another card. ATI requires a master card, which are scarce to say the least.

We feel a major benefit of sticking with NVIDIA at the moment is the friendly upgrade path. If you buy a 7800 GTX now you can buy another one at a fraction of the price next year and boost your power. However, ATI master cards are unlikely to depreciate in this way thanks to their extra silicon and scarcity. In order for ATI to catch up on this front it must show everyone that master cards are widely available to the point

where people don't give them another thought.

Then there are the motherboards. At present NVIDIA's nForce SLI is proving incredibly popular while CrossFire boards are hard to find. Intel could help ATI here as its new 975X chipset supports CrossFire, but this only helps with the high-end Intel side of the spectrum.

Of course it's far from over for ATI, as the new chipsets from both manufacturers will calm the market for some time. And remember, it was only several months ago – before the 7800 first appeared – that people were saying NVIDIA were in trouble and that ATI ruled the roost.

How quickly things change. I can't wait for the next round of battle, but for now I'll be glad for the rest, not least because I won't have to watch our Far Cry demo run through for the squillionth time in a month.

NICK ROSS, LABS EDITOR

THANKS TO...

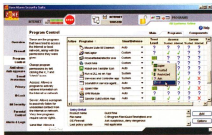
It requires a whole host of supporting products to review our PCs, notebooks, components, peripherals and software each month. So a big thank you goes out to AMD, Asus, WD, Crucial, Internode, Unwired, Draytek and Belkin for providing their products and services to our Labs.

NEXT MONTH



◀ If you're wanting to buy a new and powerful system, don't miss next month's round up of PCs. We challenge Australia's 'White Box' builders to deliver PCs with big screens, lots of gaming power, dual core processors and more – all at bargain prices.

It sometimes feels as though there are as many Internet Security packages on the market as there are cyber-nasties that they protect you from. If you're wondering which one to buy don't miss our definitive group test next month.



A Media Center PC and 32in LCD TV all-in-one

Fujitsu Deskpower TX

PRICE: \$5499 RRP **SUPPLIER:** Major stores

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You don't have to talk to Fujitsu's people very long to establish they're very proud of the Deskpower TX. To be fair, as soon as we heard that a Media Center PC / LCD TV combo was to become available in Australia we just knew that we had to get it in. We've seen similar devices before at Computex and they always draw crowds. It's easy to see why. The Media Center interface is very attractive and looks best on a big screen like this. For technophobes who don't like computers, an all-in-one system like this, which turns on with a single button, is only going to be attractive.

However, our ardour was tempered a little when we saw it. Previous systems resembled LCD TVs with a slightly elongated back – the PC was well hidden. Here the TV panel rests on the box, which itself rests on a stand. At the back there's what looks like a small suitcase attached. However, you're only likely to ever see it from the front and

the separate box is good for heat dissipation (it's as quiet as a set-top box) and doesn't take up much extra room. It looks good in your living room.

The TV panel is marvellous. Lately, the market has become flooded with cheap 32in LCD TVs (see the Acer AT3201W, November 2005, page 96) for around \$2000 which immediately

▲ Upgradeability is possible but limited. You can't add 3D graphics.

makes you question the \$5500 price here. But Fujitsu uses a top-quality Sharp Aquos LCD TV and the difference is palpable. In our DisplayMate technical tests it waltzed through everything. Its dynamic range was excellent – detail won't get lost in shadows or bright areas (like clouds). Our colour ramps were superb with only very faint banding in the white and green sections and the punitive colour spectrum test which blends colours together, was one of the best we'd ever seen. Colour purity was excellent.

For real-world testing we watched several HDTV clips and were blown away with the colours and definition of the picture. There was practically no ghosting or lag either. In short, this

is an outstanding TV. Of course, if you want to use it for computing, the 1366 x 768 Desktop is incredibly crisp and clear too.

However, we couldn't test games as the integrated 915G graphics chip couldn't run them. Indeed, the lack of upgradeability here is rather disappointing especially with so much space at the back. The included hardware of a 3GHz Pentium 4 plus two sticks of 256MB RAM are powerful enough to run Media Center smoothly though, as well as perform occasional encoding as an decent overall 2D benchmark score of 0.75 illustrates.

We also like Fujitsu's speakers. The two 5W satellites and 10W subwoofer give you a well-rounded sound with the sub adding just enough punch to the bass, although they're not the loudest speakers around. Still, as a standalone TV it's excellent. But, if you want to hook up a home-theatre system the motherboard's six-channel codec-supported optical S/PDIF out and two 3.5mm audio jacks, limits your choice.

There are other disappointments. Making the infrared receiver internal wouldn't take much. Instead it connects externally to a USB port. Also the keyboard and mouse aren't very living room friendly. However, their range and accuracy is superb (around 10 metres) but PC enthusiasts will appreciate this more than simple sitting room dwellers.

Other connectivity options aren't bad. At the front there's a speedy LG DVD recorder which supports DV-RAM and 4x dual-layer disc burning. Next to this a flap conceals the screen's OSD buttons, two USB ports, mini FireWire, S-Video, Composite and RCA audio out as well as a media card reader (SD/MMC, MemoryStick and xD). On the left are two slots for Type I/II laptop PC Cards plus headphone and audio jacks. At the back are four more USB ports, 10/100 Ethernet and two analogue tuners. There's no WLAN but a cheap laptop card costs under \$30.

The analogue tuners may disappoint some but make sense considering the Deskpower will be sold alongside set-top boxes which they need to be compatible with. You can upgrade them to

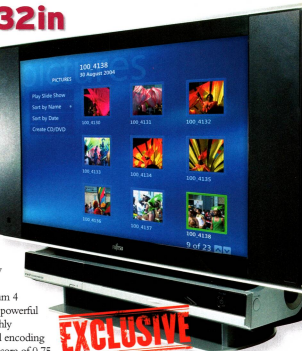
RESULTS

OVERALL

0.75

OFFICE: 0.81 2D SPEED: 0.78

ENCODING: 0.77 MULTITASKING: 0.63



EXCLUSIVE

▲ Fujitsu uses a top-notch Sharp Aquos TV as the Deskpower's centrepiece.

digital yourself if you don't mind removing the large back panels. You can't upgrade much though – you have access to the two (generous) 300GB hard disks, memory, processor and power supply but everything else is built in.

No Electronic Programme Guide is bundled but installing IceGuide (www.iceguide.com.au) is simple enough (note it costs \$3 per week).

Ultimately, the Deskpower feels very much like a first generation product – the second generation could be far more clipped and polished – though it couldn't perform much better. Some may prefer to combine the A-Listed Enspire MCE PC with a Sharp LCD TV and speakers themselves, but we really like the way the Deskpower just works as a single unit. While it's not perfect, it's incredibly desirable and we're more than happy to recommend it.

Nick Ross

SPECIFICATIONS

3GHz Pentium 4 360; 512MB PC4300 DDR RAM; Gigabyte GA-8I915GP3 motherboard; 2 x 300GB Seagate HDDs; LG GSA-6165 dual-layer DVD-RAM writer; Intel 915G graphics; 1366 x 768 32in Sharp Aquos LCD TV integrated; Windows XP Media Center Edition 2005. Dimensions 944 x 311 x 644mm (WDH). Weight 47kg. 1yr onsite warranty.

LABS VERDICT

Despite some design quirks this is an incredibly desirable system that should help bring both computer illluminati and illiterati into the excellent world of Media Center.

Performance ★★★★★
Features & Design ★★★★★
Value for money ★★★★★

OVERALL ★★★★★

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ThinkPad Z60t

PRICE: \$3499 DELIVERY: Free

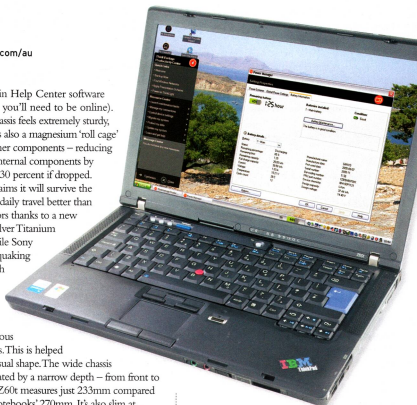
SUPPLIER: Lenovo 1300 557 073 INTERNET: www.lenovo.com/au

The ThinkPad legacy seems to be in good hands with Lenovo. Most notebooks just include a standard installation of Windows and a generic manual in the box. With the Z60t you get a manual specific to your model and bespoke software. Press the ThinkVantage button sitting underneath the screen and you'll see what we mean. Whether you want to create recovery discs that back up your hard disk image, fine-tune your power usage or simply learn all about the features included in the Z60t, you'll find the information on call. And if you do have a problem you can't solve, you can submit a question directly from

the built-in Help Center software (although you'll need to be online).

The chassis feels extremely sturdy, and there's also a magnesium 'roll cage' for the inner components – reducing stress on internal components by a claimed 30 percent if dropped. Lenovo claims it will survive the scrapes of daily travel better than predecessors thanks to a new brushed silver Titanium finish. While Sony won't be quaking in its stylish boots, the Z60t looks friendlier than previous

ThinkPads. This is helped by its unusual shape. The wide chassis is accentuated by a narrow depth – from front to back, the Z60t measures just 233mm compared to most notebooks' 270mm. It's also slim at 27mm (rising to 33mm at the back). This is still no ultraportable, but at 2.4kg with the extended seven-cell battery in place it isn't overly heavy.



▲ The Z60t's ThinkVantage technology is the best yet, offering help, system maintenance and advanced features.

RESULTS

2D SPEED



BATTERY



Toshiba Tecra S3

PRICE: \$4158 DELIVERY: \$15

SUPPLIER: www.e-shop.com.au INTERNET: www.toshiba.com.au



Toshiba's aims for the S3 are clear: It should be the most secure and durable mobile business PC available. It's also one of the first notebooks to comply with next year's rigorous RoHS environmental standards.

Our first impressions were good. While it's not the glitziest notebook, we've seen few that are more solid. All of the corners protrude from the base to help withstand impact. The cavernous 100GB hard disk

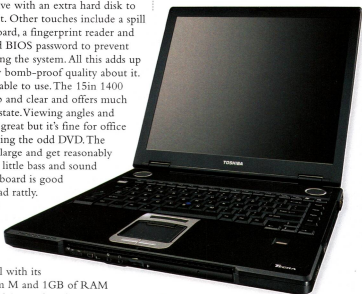
sports both ligature motion sensors and cushioning should it be dropped. The lid protecting the LCD display is also cushioned. Further protection can be added by replacing the optical drive with an extra hard disk to mirror the first. Other touches include a spill resistant keyboard, a fingerprint reader and a time-delayed BIOS password to prevent thieves accessing the system. All this adds up to a seemingly bomb-proof quality about it.

It's comfortable to use. The 15in 1400 x 1050 is crisp and clear and offers much desktop real estate. Viewing angles and colours aren't great but it's fine for office use and watching the odd DVD. The speakers look large and get reasonably loud but offer little bass and sound tinny. The keyboard is good though it's a tad rattly.

Both a decent trackpad and nipple mouse are included.

It's powerful with its 2GHz Pentium M and 1GB of RAM and scored 0.89 in our benchmarks – it will be running Office applications (and then

some) for some time yet. The Geforce 6600 GO graphics allow for some gaming though you'll have to turn down detail settings as the 17 fps in our game benchmarks shows.



▲ The Tecra S3 feels bomb proof in its design.

RESULTS

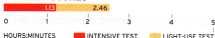
2D SPEED



3D SCORES



BATTERY SCORES



Frequent travellers may require an extra battery, though – it lasted for only four hours, 24 minutes and one hour 57 minutes in our light-use and intensive-use tests respectively. But you can buy a ThinkPad Advanced UltraBay Battery (\$189) which replaces the optical drive.

Lenovo is extremely proud that the Z60t (and its Z60m sibling with a 15.4in screen) is the first ThinkPad to include a widescreen. The 1,280 x 768 resolution is an ideal partner for the 14.1in diagonal though its viewing angles aren't overly impressive.

The keyboard lives up to the excellent ThinkPad heritage and finally sports a Windows key. Both a touchpad and trackpoint are included and a fingerprint reader sits beside them.

Other nice touches include a dual-layer DVD-RAM writer, the connectivity ports – three USB, one FireWire, a Type II PC Card slot, D-SUB output, modem and Gigabit Ethernet – are all clearly labelled, and there's wireless switch for activating the 802.11a/b/g WLAN and BlueTooth radio.

It adds up to a well-built small business notebook, though in terms of hardware you're paying a premium. However businesses should find that users are able to solve more problems themselves without support, which makes the price tag more appealing.

Tim Danton

Connectivity is good with three USB; mini-FireWire; Gigabit Ethernet; 802.11a/b/g; PC Card and Express card slots all being included. Other nice touches include the analog volume dial, wireless power switch and legacy serial and parallel ports. The optical drive usefully supports 3x DVD-RAM and 2x dual-layer burning.

It's all topped off with Toshiba's useful quick-configuration buttons and applets which let you quickly join or switch wired or wireless networks, programme shortcuts and switch profiles.

The S3 certainly needs to be regarded as a mobile PC. At 2.85kg it's no ultra portable. Lasting only one hour 13 minutes and two hours 46 minutes in our intensive and light-use tests also hampers portability.

Finally there's the three year international warranty. Wherever you are in the world the notebook will be picked up and returned fixed for you. At over \$4000 it's a hefty investment but it's certainly worth the money for businesses who want a notebook that won't need replacing for a long time to come.

Nick Ross

SPECIFICATIONS

2GHz Pentium M 760; 512MB PC4200 DDR2 RAM; 80GB hard disk; DVD-RAM writer; 8MB (shared) Intel GMA 915GM graphics; 14in 1280 x 768 LCD; 56k modem; Gigabit Ethernet; 802.11a/b/g WLAN; Bluetooth; infrared; 3 x USB 2; mini-FireWire; Type II PC Card slot; SD card slot; D-SUB and S-Video outputs; Windows XP Professional; 3yrs C&R warranty. Dimensions: 334 x 233 x 27-32mm (WDH). Weight: 2.4kg. Part code: 2513-3BM.

LABS VERDICT

Superb build quality is backed up by the excellent ThinkVantage technology. However, you're paying over the odds for it.

Performance	★★★★★
Features & Design	★★★★★
Value	★★★★★

OVERALL ★★★★★

SPECIFICATIONS

2GHz Pentium M 760; 1GB PC2-4200 RAM; 100GB hard disk; Matshita DVD-RAM UJ-932S dual-layer DVD writer; 128MB Nvidia GeForce GO 6600 graphics; 15in 1400 x 1050 LCD; 56k modem; Gigabit Ethernet; 802.11a/b/g WLAN; SD/MMC slot; 3 x USB; mini-FireWire; 2 x Type II PC Card slot; Express card slot; D-Sub; S-Video out; Serial; Parallel; Windows XP Pro; 3yrs C&R warranty. Dimensions 344 x 285 x 38mm (WDH); 2.85kg. Part code: P7S30A-014008

LABS VERDICT

An incredibly sturdy business notebook. It's pricey, but a good long-term investment for business and mobile workers.

Performance	★★★★★
Features & Design	★★★★★
Value	★★★★★

OVERALL ★★★★★



Shuttle XPC M1000 [PREVIEW]

PRICE: \$2599 RRP **DELIVERY:** Depends on reseller

SUPPLIER: TBC

Shuttle has done it again: fantastic consumer-style looks, quiet operation and great connectivity make it an attractive addition to the lounge room.

Given Shuttle's record with small-form-factor PCs, we were excited when we heard news of its foray into the world of hi-fi-style Media Centers. The result is this, the Shuttle XPC M1000, and it's undoubtedly the closest thing we have to an entertainment chassis. It looks and feels like a games console, or a VCR with modern curves.

The front panel is jet-black and houses a bright, digital display that shows useful information. The rest may seem a little bare, but there are hidden panels on both sides of it – flip them down and you'll find USB ports, card readers and an innovative 2.5in hard disk slot. Shuttle even bundles the matching hard disk case: simply install your own disk and you can use it for plug-and-play removable storage, offering a vastly superior capacity to standard USB flash drives or media cards.

Under the hood sat a 1.73GHz Pentium M 740, giving enough performance yet producing very little heat or noise. It was also very quiet when playing a DVD. Our machine sported 512MB of PC2700 memory and a 250GB Seagate hard disk. The latter is a consumer electronics disk, intended for ultimate quietness. Quietness is clearly the primary aim of the DVD drive too: it only writes to single-layer discs, and rather slowly at that. The presence of a GeForce 6600 means gaming is a possibility with a reasonable level of graphical detail. We saw playable frame rates at 1,280 x 1,024 simply by turning off AA and AF.

At the rear is a fantastic array of outputs, consisting of DVI, VGA, S-Video and the rare but welcome component output. Audio-wise, there's optical and coaxial S/PDIF connectors, 7.1 channel RCA-out and stereo RCA-in sockets – this Media Center PC will connect to your existing equipment with minimal hassle and a selection of cables are included.

The keyboard and remote match the M1000 with their black and silver styling, and Shuttle has wisely opted for a trackball instead of the woeful joysticks and directional pads of some other keyboards we've seen. Our M1000

came equipped with two analog tuners, but we've advised you can opt for digital ones at no extra cost.

If you're looking for a stylish Media Center PC with a wide array of interfaces and silent operation, the Shuttle XPC M1000 could be a winner depending on the final specs and price. **David Bayon**

SPECIFICATIONS

1.73GHz Pentium M 740; 512MB PC2700 RAM; Shuttle Intel 915PM motherboard; 250GB Seagate DB35 hard disk; Gigabyte GO-W-08048 DVD writer; 2 x AVerMedia M233-C analog tuners; 802.11b/g wireless; Creative SoundBlaster Live 24-bit PCI 7.1 audio; Remote control; Hard Disk case; Media keyboard; Windows XP Media Center Edition; Warranty TBC.

LABS VERDICT

Performance	★★★★★
Quietness	★★★★★
Features & Design	★★★★★
Value for money	★★★★★

OVERALL ★★★★★

Creative Zen Neon and Zen MicroPhoto

PRICE: Neon 5GB \$279, 6GB \$275; 8GB MicroPhoto \$380

DELIVERY: \$14 **SUPPLIER:** www.mp3direct.com.au

INTERNET: www.creative.com

The Neon sports four different back colours with a plastic 'piano black' front.

Upon this you can affix zany 'Stik-On' stickers to make it look rubbish – the bare player looks much better. It sports a mini-USB 2 port for charging and transfers, 2.5mm line-in jack for onboard recording (WAV and MP3 up to 160Kbps) and FM radio. The onboard display can flash different colours and is easily readable. However, while fast-forwarding through songs and lists with the jog-dial was a breeze, every time it switched song or mode there was an annoyingly long wait. We like the separate lock key too.

The MicroPhoto now sports a metal chassis and the battery is removable. Apart from the ability to display JPG photographs, you can synchronise your Outlook contacts and calendar and tasks. The photos look good on the OLED screen, but the square shape leads to serious cropping – we liked it mostly because it made navigation a breeze. The small vertical track pad will be a bit small and fiddly for some but works well with practice.

It lacks the line-in port of the Neon but does include the voice recorder and radio.

Both come with a pouch and a modest set of headphones. These are certainly features that the iPods do not have – though none come with a separate charger. But their main advantage over Apple is the ability to play WMA and WMA-DRM files. This keeps them in line with Windows' default music compression format and offers compatibility with all online shops (other than iTunes).

Uploading tracks via Windows Media Player proved very simple and took 47 seconds on the MicroPhoto and 140 on the Neon compared to the iPod's 31 seconds. However, it was battery life that knocked the Neon out of contention for an award lasting a poor 11-and-a-half hours. The MicroPhoto lasted 15-and-a-half.



Epson Perfection 3490 Photo

PRICE: \$206 **DELIVERY:** \$15

SUPPLIER: www.e-shop.com.au **INTERNET:** www.epson.com.au

The Epson Perfection 2580 ruled the A-List scanner category for four months before being discontinued. We liked its automatic 35mm film feeder, its excellent software package, and above all, its superb image quality.

The speed of the 3490 is unchanged, but that's no cause for complaint. At 150ppi, a 6 x 4in print scanned in a stunning six seconds, which is actually faster than taking a preview (nine seconds). A 300ppi A4 scan of a photograph – all you'll need for most purposes – took just 21 seconds: if you've got a box of photos to digitise, the 3490 is for you.

There's no automatic film feeder, but if you're planning on scanning plenty of negatives, then consider spending the extra \$90 for the otherwise identical 3590 – it's well worth it. It will halve the time it takes to scan a strip of four negatives.

Quality is paramount, and this Epson produced some exceptional results. It beats the Canon LiDE 500f (October 2005, page 79), which costs \$3 more. There was a pleasing lack of colour casts too, although our one criticism would be that the default mode leaves images over-saturated, so colours look more vivid than they should.



Luckily, Epson supplies some heavy-duty image-correction software to help everyone from total beginners to serious enthusiasts get the best from the 3490's excellent hardware. There's a beginners mode, which is too simple to be of much use, a reasonably powerful home mode, and a professional mode which, while not quite as powerful as the moniker suggests, is the one that offers the most features. The key inclusion is adjustable saturation, which is a straightforward way of dealing with the 3490's only real quality failing. You can also adjust the tone curve and histogram, while colour balance is another useful tool that

allows you to generally get your scans right without actually needing any third-party image software.

The bundled OCR software has been upgraded from ABBYY FineReader 5 to version 6, but it's still the Sprint version, which falls some way short of other OCR packages in terms of features, if not raw accuracy. If all you ever need to scan are straightforward text and image boxes you'll have no cause for complaint, but you'll be frustrated if you're dealing with complex documents that need manual zoning.

On the plus side, FineReader is quick – it took just 16 seconds to scan and recognise a greyscale A4 document at 300dpi, and it

But despite all the WMA support and extra features, we'd still go for the luxury of the iPods anyway. Creative's players just lack a certain something – and they feel cheap. Still, the MicroPhoto is a tempting choice for those requiring WMA playback, although it feels expensive at \$380 for 8GB.

Nick Ross

SPECIFICATIONS

Neon 568 MicroDrive; FM Radio; Voice Recorder; 2.5mm Line-in port; USB 2 interface; fixed Lithium-ion battery; support for MP3, WMA and WAV formats; Dimensions 47 x 16 x 80mm (WDH). Weight 75g.
MicroPhoto -8GB MicroDrive; USB 2 interface; removable Lithium-ion battery; support for MP3, WMA, WAV formats; Dimensions 51 x 17 x 83mm (WDH). Weight 115g.

LABS VERDICT

The MicroPhoto is the pick of the two, but unless you crave WMA, the iPods are better.

Creative Zen Neoon
Performance ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

Zen MicroPhoto
Performance ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

recognised a simple graph, table and all the text flawlessly. Scans of monochrome text were excellent, although we noticed some very slight soft edges, but nothing that would make us hesitate to use the 3490 as a low-volume archive scanner.

But the lacklustre OCR software really is the only major downside to this superb scanner. It's exceptionally fast and, with the most minute of adjustments, offers image quality that will do justice to any photo you scan. The best-in-show TWAIN software and low price mean the 3490 is our pick of the \$200 scanners.

Dave Stevenson

SPECIFICATIONS

48-bit colour CCD flatbed scanner; 16-bit greyscale scanning; 3200 x 6400ppi optical resolution; 12,800ppi interpolated resolution; USB 2 interface; 224 x 305mm scan area; transparency scanner for 35mm and slides; drivers for Windows 98 onwards. Dimensions: 275 x 419 x 86mm (WDH). Weight: 3.2kg.

LABS VERDICT

What more could you want? Superb image quality, amazing speed and a decent price mean the 3490 beats all-comers.

Performance ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

Palm Tungsten T|X

PRICE: \$488 **DELIVERY:** \$10

SUPPLIER: www.newell.net.au **INTERNET:** www.palm.com/au

It's becoming increasingly difficult to buy a phone or PDA that doesn't have a camera built into the back, so in many ways the T|X is a welcome change. For this is meant to be a business PDA, designed for serious people with serious jobs.

For instance, thanks to VersaMail and the integrated 802.11b radio, you can theoretically download your email and calendar whenever you're in a wireless hotspot via Microsoft Exchange ActiveSync. The 'theoretically' is a big one though: just for starters, your business will need Exchange Server 2003. Most people are more likely to pull email down from their non-corporate accounts, either via Wi-Fi or using Palm's excellent Bluetooth Wizard to partner with a suitable Bluetooth phone; miraculously, this takes less than a minute to set up.

Documents To Go 7 is bundled too. This lets you view and edit Word and Excel files and takes full advantage of the 320 x 480 screen: flipping between portrait and landscape is as simple as tapping an icon. You can't edit presentations, but Slideshow To Go lets you run through them before that vital meeting. Palm is also encouraging people to download the free Avennu application. Load this onto your Palm and PC, and you'll be able to access any file on it whenever you're connected to the Internet.

The look and feel of the T|X is again designed to appeal to businesses. Any hint of garishness has been stamped out, with a subdued, metallic blue finish and a sensible black flip cover. We have our doubts about the cover though – it doesn't fit very snugly, so putting the Tungsten into your pocket could see the screen get scratched by stray keys. A sturdier case may well be necessary.

This is a shame, as at 13mm thick the Tungsten weighs very nicely into trouser pockets. Slipping 149g, it's also quite light. Its portability claims are slightly weakened by its battery life, though. While the Tungsten E2 (see A-List) lasted for eight hours' continuous use, the T|X gave up after five-and-a-half hours. And music playback followed a similar pattern: nine hours compared to the E2's 17 hours.

Mind you, thanks to the inclusion of Pocket Tunes 3 rather than the Tungsten E2's ageing RealPlayer, the T|X is a far slicker music-playing device – there are plenty of options, large onscreen controls and an easy-to-use playlist manager. The 100MB of available storage space is also superior to the E2's meagre 26MB. A dedicated MP3 player is inevitably a better choice – the T|X lacks a Hold button, for example, and doesn't include earphones in the box – but if you're after an occasional audio device it won't disappoint.

You can play videos too: the 312MHz processor made playback notably smoother

▼ The Tungsten T|X will keep you in touch wherever you are, thanks to built-in Wi-Fi and Bluetooth.



than the 200MHz chip inside the E2, and Palm is positively encouraging people to view their own videos on the T|X. Just drag non-copy-protected videos onto the Palm Quick Install icon, and the file will be automatically converted to a format the T|X understands – it worked fine for all the WMV, QuickTime and MPEG1 clips we tried.

It all adds up to a far more flexible PDA than the Tungsten E2, but it doesn't do quite enough to topple it from our A List. The E2 offers all the features most people need from a PDA, including Bluetooth, for a substantially smaller sum. More tellingly, the T|X's price places it in a niche uncomfortably close to fully featured Pocket PCs such as the Dell Axim. Given the minuscule price difference, we'd opt for the latter due simply to Windows Mobile's far better integration with Windows and Outlook.

Tim Danton

SPECIFICATIONS

312MHz Intel XScale processor; 100MB available flash memory; 320 x 480 transfective TFT (54 x 80mm); SD/MMC/SDIO slot; 802.11b WLAN; Bluetooth; infrared; USB synchronisation cable; Palm Desktop; DataViz Documents To Go 7; Palm OS 5.4. Dimensions: 75 x 13 x 121mm (WDH). Weight: 149g.

LABS VERDICT

If you're searching for a business-like PDA with Wi-Fi then the Tungsten T|X does the job, but the price is too close to more attractive Windows Mobile devices.

Performance ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

Samsung SyncMaster 730BF

PRICE: \$399 DELIVERY: \$14

SUPPLIER: www.msy.com.au INTERNET: www.samsung.com/au

The 730BF is a TN (Twisted Nematic) TFT with a grey-to-grey response time of 4ms, placing it among the fastest monitors on the market – theoretically, at least. Fortunately, our tests bore this out – there was just the faintest

ghosting effect in our technical response time test. However, the 730BF's viewing angles aren't the best; beyond 45 degrees the brightness drops off.

There are a decent range of colour customisations available. Getting to these is relatively simple, thanks to the well-designed OSD. There are no temperature options more specific than Cool, Normal and Warm, but you can at least see the effect your changes will have before you OK them.

With the colours left at their default (Normal), we found white-level saturation was a weak point, with very light greys appearing white. But colour tracking and pixel tracking were nearly flawless.

Samsung's MagicColor is also included, which claims to enhance select colours, such as skin tones, and there's a split-screen mode to demonstrate the difference between the two. Unfortunately, the only difference we could find was that MagicColor oversaturates warm colours while leaving white colours washed out.

We've no complaints about build quality, and although it's not the most stylish TFT we've seen, a detachable cover on the back hides the DVI-D, D-SUB and power ports and keeps things neat.

Where the ViewSonic VP730b (see A List) wins over the 730BF is with its added features. Unlike

the VP730b, Samsung's offering doesn't support pivoting, and the height isn't adjustable. The stand's only real plus point is its tilt adjustability. However, we're huge fans of Samsung's 3-year zero defect policy – there are no dead-pixel worries here.

However, the VP730b also guarantees no dead pixels on delivery and, despite costing \$50 more, still wins our vote with its superior stand, performance and features.

Dave Stephenson

SPECIFICATIONS

17in TFT; 4ms response time; 300cd/m² brightness; 700:1 contrast ratio; 1280 x 1024 native resolution; D-SUB input, DVI-D input; TCO 99 certified; Dimensions: 382 x 175 x 386mm (WDH). Weight: 3.6kg, 3-year zero defect warranty.

LABS VERDICT

Samsung's practical, no-frills monitor isn't good enough to knock ViewSonic off the A List, but the 3-year zero-defect warranty is great.

Performance

Features & Design

Value



OVERALL



▲ The Samsung boasts a lightning-fast response time and a rock-solid image.

Dell 3007WFP

PRICE: \$2899 DELIVERY: Free

SUPPLIER: Dell 1300 851 161 INTERNET: www.dell.com.au



It wasn't just Fujitsu's Media Center (page 38) that stopped people in their tracks this month. Dell's 30in 3007WFP, with its massive 2560 x 1600 (four million pixel) resolution caused double takes from anyone that walked past.

To use it you'll need a decent graphics card with a true DVI-D port. Once we'd got it up and running we were greeted with an incredibly sharp and vast desktop that allows three Word documents to be opened at 100 percent all at once.

We put it through its paces with our DisplayMate technical assault course. Colour purities were fine, there was no pixel jitter in our fine-mesh patterns. Displaying multicoloured text on multicoloured backgrounds saw no problems either. However, its dynamic range isn't the best: very dark shades turn black a little too soon and detail can be lost in highlighted areas. However, it did very well in the colour ramps with very little banding evident. The colour spectrum test, which blends different colours, looked superb.

In the real world tests, games looked phenomenal (and life sized) at every widescreen resolution. However, playing Far Cry at full resolution with HDR proved too tough for two overlocked 7800 GTX cards in SLI. There was little ghosting when watching videos though

compression artefacts get noticeably amplified. Even HDTV had trouble when scaling. But we can't hold this against the Dell, it's simply too good for the test. Viewing angles are good but not the best. The stands allow swivel and tilt control.

The high resolution is ideal for designers and photographers, but anyone who values immense clarity will find themselves wanting it. At \$2899 it's reasonably priced (over \$1000 less than Apple's competitor). You also get a four port USB hub and all-format media card reader built in. Dell's two-week

satisfaction guarantee also means that you needn't accept any dead pixels on arrival. After this you're allowed five separated or three clustered for a year before exchange.

All in all, while it's not technically the most proficient LCD it's still a hugely-capable professional tool. The price brings it within range of mere mortals too, making it a winner.

Nick Ross

SPECIFICATIONS

30in LCD monitor; 11ms response time; brightness 400cd/m²; contrast ratio 700:1; native resolution 2560 x 1600; DVI-D; SD/MMC, MS, SM, Compact Flash media card reader; four-port USB hub; 691 x 170 x 481mm (WDH); 11.4kg, 2-week satisfaction guarantee. 5 dead or 3 clustered dead pixels thereafter.

LABS VERDICT

A stunning piece of hardware that will tempt more than just the high-end designers it's intended for.

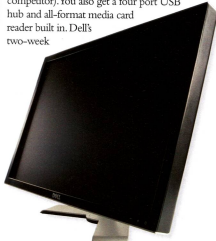
Performance

Features & Design

Value



OVERALL



Style in a box

SilverStone SG01

PRICE: \$231 DELIVERY: \$12

SUPPLIER: <http://jantechcomputers.com.au>

INTERNET: www.silverstonetek.com



We've been used to seeing small-form-factor PCs emerging over the past few years, but German manufacturer SilverStone has produced an intriguing variation. Smaller than a mini-tower case yet significantly chunkier than a Shuttle system, the SG01 almost deserves a category of its own, such is its unusual size. The concept is to offer a small form factor to those who don't want to lose the flexibility of a desktop PC.

Choice isn't something small-form-factor PCs commonly provide, coming pre-equipped with a power supply and custom motherboard at the very least. Neither is present in the SG01, leaving you with the barest possible chassis and much more choice - removing the cover reveals enough room for a microATX motherboard. The range of available boards in this size is growing all the time, and this immediately sets the SG01 apart from its smaller brethren.

'The SG01 is an intriguing idea, and one that offers much more freedom and future-proofing than the usual SFF chassis.'

The extra space also makes building the system far less fiddly. Following the recommended assembly order, the internal 3.5in drive bay is the first to come out, sliding easily once the two screws are removed. It has an 80mm fan mounted on one end to draw air from a side vent and across the two hard disk bays before being expelled from a similar vent on the other side.

Once the motherboard and its CPU are secured in place, you'll start to appreciate just how unique the SG01 is. There's room for a standard ATX power unit of your choosing, opening up the field to include higher-rated or passively cooled models. You'll need to be a little selective, though, as the PSU fits immediately above the CPU cooler and you don't want hot air being pushed out of one

► The SG01 allows for full-sized components in a small-form-factor chassis.

and straight into the other. That means power supplies with base-mounted fans are best avoided.

There's more flexibility to be had elsewhere too, with space for two full-sized optical drives, as well as four expansion cards, although they're accessible only after you remove the rear 60mm exhaust fan. With its tiny screws, this will prove to be quite an annoyance if you change your system components with any regularity.

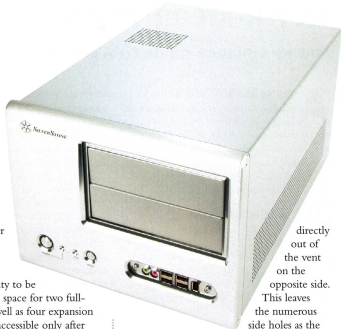
The SG01 can accommodate two double-width graphics cards for a potential SLI setup,

although as there are only four slots this will leave no space for any other cards. The outer card can make use of one of the many vents in the case's side, but the inner card will need extra cooling. Thankfully, there's an empty 60mm fan slot in the roof directly above the expansion slots, which could prove handy in the case of any other hot-running expansion cards.

A slight layout problem comes from the cross-case orientation of the hard disks. SATA disks will be fine, but if you plan to use IDE disks you won't be able to connect a single cable to an optical drive and a hard disk at the same time, as their rear connectors aren't close enough to each other. The sheer number of cables snaking from an ATX PSU also causes problems, as there isn't much dead space to stow them away and improve airflow.

Elsewhere, the cables from the front panel are long enough to reach any part of the case, which allows them to be tucked into spare gaps out of the way. You can then slot the 3.5in drive bay back in place beneath the optical drives. Once that's done, the internals are certainly tight, but still positively roomy compared to an SFF case.

Unfortunately, once running, the only fan drawing air into the case is the one mounted in the 3.5in drive bay, which blows the majority of its air



directly out of the vent on the opposite side.

This leaves the numerous side holes as the only other means

of ventilation, and the graphics card and power supply unit create a partially enclosed area around the processor, which doesn't get much cooling at all. When working hard, that lower rear corner of the case can become hot to the touch, but temperatures stayed within reasonable limits even when putting the system through its paces - and that was with a fully loaded 3.2GHz Pentium D system. The good news is that we found the SG01's fan noise to be surprisingly minimal - the fans we added were notably noisier than those supplied with the case.

The SG01 is an intriguing idea, and one that offers much more freedom and future-proofing than the usual SFF chassis. But we can't help but feel it doesn't really belong anywhere: if you want the power and options of full-sized components there are desktop cases available that have a much slimmer footprint and aren't that much taller than the SG01. It may appeal to the LAN party crowd, as it's portable and the brushed aluminium makes it sturdy, but at this price it just isn't the new beginning it could have been.

David Bayon

SPECIFICATIONS

MicroATX chassis; 2 x 5.25 external drive bays; 2 x 3.5in internal drive bays; front I/O panel: 4 x USB 2; FireWire; headphone; microphone. Dimensions: 263 x 393 x 210mm (WDH). Weight: 3kg.

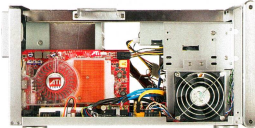
LABS VERDICT

An interesting approach that's executed extremely well, but its compromise between small and standard form factors leaves it in an awkward middle ground.

Performance
Features & Design
Value for money



OVERALL



▲ You can squeeze four expansion cards, two hard disks and two optical drives into this chassis.

ATI Radeon X1000 series

The at-a-glance guide to ATI's new batch of GPUs.

ATI's highly anticipated range of graphics cards has finally hit the shelves. With cards designed for budgets ranging from \$100 to \$1000, ATI is hoping to cater for every type of gamer. Here, we introduce the technology behind the new GPUs, and on the opposite page we review a top-end retail version of each one.

BASIC ARCHITECTURE

The Radeon X1000 series (encompassing the X1300, X1600 and X1800 ranges) is ATI's first range of cards with no support at all for AGP, so if you're a die-hard ATI fan with an AGP motherboard you'll have to say goodbye to it. Each card is based on a brand-new processor: the X1300 on the RV515, the X1600 on the RV530, and the X1800 on the R520.

Some key architectural features are consistent across the whole range of X1 cards, regardless of which chip is used for processing. All the GPUs are fabricated on a 90nm process, which means lower heat, higher efficiency and faster clock speeds. One crucial feature is Shader Model 3 compatibility – although it doesn't guarantee better visual quality, it does ensure better software performance. It also allows more lights to be rendered per pass (up to four), as well as geometry instancing; that is, drawing a character or object once and then creating it onscreen multiple times. ATI's previous generation of cards was only compatible with Shader Model 2.

X1300

This is the baby of the group, costing between \$100 and \$250 and the only card in the new line-up to support HyperMemory. ATI's method of borrowing system RAM to augment onboard graphics memory. With just a pair of

vertex shaders and four pixel pipelines, the latest games are a challenge too far. Half-Life 2 at 1280 x 1024 with no anti-aliasing or anisotropic filtering will be fine, but you can forget High Dynamic Range (HDR) rendering, as well as brand-new releases such as F.E.A.R....

There are three X1300 variants: the X1300 HyperMemory, the standard X1300, and the X1300 Pro, which boasts a 600MHz clock speed compared to the 450MHz of the other two. Memory clock speeds are set at 500MHz, 250MHz and 400MHz respectively, with the extra speed of the HyperMemory variant needed to shuffle data between the system RAM and the graphics card.

X1600

The X1600 is a step up. Priced in the \$250 to \$400 range, these cards will appeal to anyone more serious about gaming. It can handle this season's latest crop of games (although not at higher resolutions or the best detail settings), thanks to 12 pixel pipelines. There are two variations: the X1600 Pro and the X1600 XT. Both cards share the same memory and processor architecture, but differ in frequency. The Pro has a core clock of 500MHz and a memory clock of 390MHz, compared to the XT's faster speeds of 590MHz and 690MHz respectively.

X1800

Finally, the X1800 is the powerhouse of the range. Built around the R520 chip, the whole family promises to handle any game you can throw at it: Far Cry, Call of Duty 2, F.E.A.R., and Half-Life 2: Lost Coast (an expansion pack to the original title) will all achieve playable frame rates at the highest detail settings and resolutions.

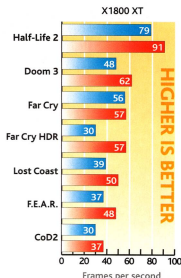
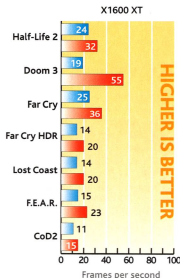
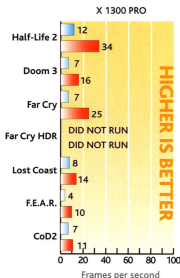
There are two main variants here: the XL and the XT. The chief difference is in the frequencies used: the XL's GPU is clocked at 500MHz and its GDDR3 RAM at 500MHz, while the XT runs at 625MHz and 750MHz respectively. Both have 256MB of RAM onboard, although there's also a top-of-the-line version of the XT (see opposite) with 512MB of RAM. As we saw last month, the XL retails at a similar price to NVIDIA's 7800 GT – around \$600. The 256MB XT will sell for around \$700, with the 512MB version pushing \$800.

BENCHMARKING

We treated each of these cards to our normal benchmarks: Half-Life 2 and Far Cry at medium and tough settings. These ran smoothly even on the mid-range X1600, while the X1800 simply brushed them aside. Thankfully, a new crop of challenging titles has recently emerged, and we pressed these into action to see how next-generation gaming will fare.

The first is Call of Duty 2, Activision's hardware-intensive first-person shooter. We used a custom timedemo, with all graphics settings set to their maximum. Half-Life 2: Lost Coast has also recently emerged as a showcase for HDR rendering, and we used this with maximum settings too. Then there's F.E.A.R., the game enthusiasts have been anticipating for months. Incredibly complex geometry and shading make this a mean test of any graphics card, including the heavyweight X1800 XT. We tested these new benchmarks on all the high-end cards we reviewed this month, including NVIDIA's new 7800 GTX 512 card (see page 48). For each, we ran our demos at 1280 x 1024 and 1600 x 1200, with 4x AA and 8x AE.

Dave Stevenson



**EXCLUSIVE**

MSI RX1300 Pro-TD256E

PRICE: \$175 **DELIVERY:** 0**SUPPLIER:** www.msi.com.au**INTERNET:** www.msicomputer.com.au

With NVIDIA's 6200 and 6600 ranges both supporting Shader Model 3, they have, up until now, been alone in the sub-\$200 graphics market. The new ATI X1300 series puts pressure on both by offering the potential of decent gaming performance for the same price.

Sure enough, the X1300 performed well in our standard Half-Life 2 and Far Cry tests, scoring rates of 34fps and 25fps respectively at 1280 x 1024 with 4x AA and 8x AF. Our tougher benchmarks brought the X1300 Pro to its knees, though; FE.A.R., played at 10fps at the same setting, and even Doom 3, which is nearing its first birthday, scored just 16fps. Anything above 1280 x 1024 or medium detail settings will be off limits in current games.

If all you're looking for is a basic DirectX 9-compatible graphics card, there are cheaper alternatives, but for gamers on an extreme budget the X1300 may be just the ticket. Its closest competitor by price is NVIDIA's GeForce 6600 DDR2 (see Product Brief, page 50), which it outperformed in all of our 1280 x 1024 tests.

As a bonus, MSI's package is the definition of budget. An S-Video cable to compliment the outlet on the card and a D-SUB to DVI converter are all the extras you get. But if that's all you need, it's a good choice.

SPECIFICATIONS

ATI Radeon X1300 Pro GPU; 600MHz core clock; 256MB GDDR3 RAM; 128-bit memory interface; D-SUB; DVI-I; S-Video; 2 x vertex, 4 x pixel shader pipelines.

LABS VERDICT

Quiet and unobtrusive, but only good for gaming at the lowest of resolutions.

Performance	★★★★☆
Features & Design	★★★★☆
Value	★★★★☆

OVERALL

★★★★★

**EXCLUSIVE**

GeCube Radeon X1600 XT

PRICE: \$257 **DELIVERY:** \$15**SUPPLIER:** www.pc.net.au**INTERNET:** www.gecube.com

If the thought of paying over \$500 for a graphics card fills you with terror, but you simply must play the latest games at decent settings, the X1600 XT seems the best choice here.

Its most obvious price competitor is another ATI product – the passively cooled Sapphire X800 GTO Ultimate which sits proudly on our A List.

Our benchmarks tell a surprising story, though: the X800 GTO equals and, in some cases, beats the X1600 XT. Running our standard Far Cry and Half-Life 2 tests, the X1600 XT scored 36fps and 32fps respectively, while the GTO scored 56fps and 58fps. All of these scores are still playable, but we were expecting more.

Taking the resolution up to 1600 x 1200, the X800 GTO gets 30fps-plus results in Far Cry and Half-Life 2, while the X1600 XT only manages a barely playable 25fps in Far Cry and 24fps in Half-Life 2.

Ultimately, the X1600 XT is an awkward proposition. Shader Model 3 is an important bonus, but the current price to performance ratio is disappointing. New driver releases may solve its woes, but for the time being we recommend sticking to the X800 GTO if you only have around \$300 to spend.

SPECIFICATIONS

ATI Radeon X1600 XT GPU; 590MHz core clock; 256MB 690MHz GDDR3 RAM; 128-bit memory interface; 2 x DVI-I; S-Video; 5 x vertex, 12 x pixel pipelines.

LABS VERDICT

Some respectable scores mean the X1600 is worth a look, but for now the best bet at this price is still the X800 GTO.

Performance	★★★★☆
Features & Design	★★★★☆
Value	★★★★☆

OVERALL

★★★★★

**EXCLUSIVE**

MSI RX1800 XT-VT2D512E

PRICE: \$799 **DELIVERY:** \$15**SUPPLIER:** www.newcomputers.com.au**INTERNET:** www.msicomputer.com.au

With our A-Listed performance graphics card, the Albatron 7800 GT, costing just \$578, the X1800 XT has its work cut out to justify its price.

The X1800 XT is blessed with some phenomenal specifications: a 90nm GPU core clocked at 625MHz is joined by 512MB of onboard RAM at 750MHz. It's the sort of specification PCs themselves had not long ago. As well as 16 pixel pipelines, there are 16 Render Output Pipes (ROPs), leaving an X1800 XT with plenty of weapons to face any game.

Amazingly, the X1800 XT scored 30fps or better in every single one of our extreme tests, including FE.A.R. and Call of Duty 2 at 1,600 x 1,200. It also means the X1800 XT is around 12 percent faster in our benchmarks than the 7800 GTX, with which it shares a similar price.

However, the X1800 XT has already lost its fastest-in-market status to the 7800 GTX 512 (see page 48), which just shows how quickly the market moves. But then the 7800 GTX 512 will cost around \$50 more and all that extra power is currently gratuitous – if money matters, the 7800 GT represents far better value.

Should you wish to splash out, the value of MSI's card is bolstered with Colin McRae Rally 2005, but for now we prefer waiting for ATI's slightly slower, much cheaper X1800 XL cards (January 2006, page 46) to mature in the market.

SPECIFICATIONS

ATI Radeon X1800 XT GPU; 625MHz core clock; 512MB 750MHz GDDR3 RAM; 256-bit memory interface; 2 x DVI-I; S-Video; 8 x vertex, 16 x pixel pipelines.

LABS VERDICT

Stunning performance, but overkill for most and very, very expensive.

Performance	★★★★★
Features & Design	★★★★★
Value	★★★★★

OVERALL

★★★★★

Asus Extreme N7800GTX 512MB

PRICE: Around \$850 DELIVERY: \$15

SUPPLIER: www.newcomputers.com.au INTERNET: www.asus.com.au

The original 7800 GTX (August 2005, page 39) was the card we'd been waiting for: Shader Model 3 compatibility, high clock speeds and 24 pixel pipelines, all on a PCB that only required one PCI Express slot and a normal cooler. Then there was the 7800 GT (October 2005, page 52), which answered dreams we didn't know we even had – nearly as quick as the GTX, yet \$200 cheaper.

So it's difficult to know how to react to the 7800GTX 512MB. Take a look at the picture: it's the biggest card NVIDIA has released this year, requiring two PCI Express slots and a 90mm fan. It's also even faster than the 7800 GTX, which means that, unless your monitor is capable of some unusually high resolutions, you'll only be able to see the benefit with a handful of the latest games.

But it's difficult not to feel enthusiastic about such a no-holds-barred piece of hardware. There's the design, for a start. Double-height cards, such as ATI's brand-new X1800 XT (see page 47), tend to be noisy, so it's incredible that NVIDIA has reduced noise to a level barely louder than a case fan.

It was immediately clear that the 550MHz core and 512MB of RAM (clocked at

850MHz) would need more than our standard Half-Life 2 and Far Cry tests, in which it scored 88fps and 56fps respectively. So we threw Call of Duty 2, Half-Life 2: Lost Coast and E.E.A.R. at it too. At 1280 x 1024, it didn't drop its average below 30fps once. Even at 1600 x 1200 with the highest quality settings, E.E.A.R. averaged 35fps, and Call of Duty 2 32fps. All of this means the N7800GTX 512MB is even quicker than ATI's X1800 XT.

It's all highly impressive. But to even consider this card being worth buying, you'll need to be a committed gamer with a high-resolution monitor, access to all the latest titles and, needless to say, very deep pockets. If either you or your monitor won't play games at more than 1600 x 1200, there's simply no point wasting the extra power.

Dave Stevenson

SPECIFICATIONS

NVIDIA GeForce 7800 GTX GPU; 550MHz core clock; 512MB 850MHz GDDR3 RAM; 256-bit memory interface; 2 x DVI-I and S-Video outputs; 8 x vertex, 24 x pixel pipelines.



EXCLUSIVE

LABS VERDICT

Awesome performance, but too expensive if you won't push it to its limits.

Performance ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

Asus A8N-SLI Deluxe

PRICE: \$239 DELIVERY: From \$10

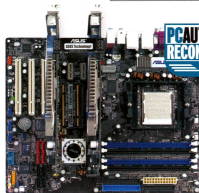
SUPPLIER: www.gamedude.com.au INTERNET: www.asus.com.au

With the demise of Gigabyte's A-Slited motherboard it was time to revisit the A8N-SLI Deluxe. The nForce4 SLI motherboard not only offers hardware-firewalled Gigabit Ethernet, a range of RAID options for the four Serial ATA 2 ports it feeds and lightning quick core logic, but it also feeds two PCI Express graphics slots. While SLI may seem overkill – one decent graphics card is more than enough for most people – it does offer a friendly upgrade path. Get one graphics card to power your games today, and when it can't handle the new game you've just bought, add a second to near-double performance on the cheap. The latest nForce drivers now accept any two SLI-able cards of the same chipset rather than two identical cards from the same manufacturer.

ASUS also adds its own flair to the board. There's a second RAID controller for a maximum of eight hard disks. There's the large

two-slot gap between the two graphics slots to allow for double-height graphics cards or GPU water-cooling blocks. And all the connectors, power sockets and headers are sensibly placed for a neat system with smooth, efficient airflow. There's also a Marvell chip for a second Gigabit Ethernet port. Add to this the 7.1 audio from the Realtek audio codec and the three USB headers and single FireWire header and the A8N-SLI Deluxe is a brilliant foundation for your AMD system.

It's no surprise that we're seeing so many of these boards coming through the Labs. It offers all you want from a motherboard and the price isn't too high. Especially when you take into consideration everything else that comes in the box. From extra Serial ATA cables to parallel cables and backplates there is, again, everything you need. Our only concern is the whiny chipset fan, but you can get a passive heatsink for this from Zalman for around \$15. Or you can spend a bit more on the A8N-SLI Premium, which is the same board but for a



▲ Everything you could need from a motherboard for around \$200.

passive-cooling heatpipe – at \$50 extra.

Once fitted you'll have a powerful AMD dual core-capable board with so many connectors and system-building possibilities you'll be the envy of all. **Clive Webster**

SPECIFICATIONS

Socket 939 AMD Motherboard; NVIDIA nForce 4 SLI chipset; 4 x DDR RAM sockets; maximum 4GB memory; 2 x Ultra ATA/133 connectors; 8 x SATA connectors; 3 x PCI, 2 x PCI E (1x), 2 x PCI E (16x); 2 x Gigabit Ethernet; 4 x USB 2; 1 x FireWire; parallel port; Realtek ALC850 7.1 audio; optical and coaxial S/PDIF out.

LABS VERDICT

Dual core support, SLI and plenty of extras will have you almost bogged by the build possibilities. It's a must-have for anyone building an AMD rig.

Performance ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

RESULTS

2D SPEED



OFFICE: 1.25 2D GRAPHICS: 1.17
ENCODING: 1.11 MULTITASKING: 1.18

BETTER →

TEST RIG: 2GHz AMD Athlon 64 4800+; Asus A8N-SLI Deluxe motherboard; 1GB Crucial PC2000 RAM; 36GB Western Digital Raptor hard disk.



The new Coolpix P Series with wireless image transfer

The Nikon Coolpix is more than your everyday camera. With a range of easy-to-use features, it helps you take better pictures, more easily. And the new 8MP P1 and 5MP P2 with Wi-Fi technology let you transfer each image to your computer or printer, wirelessly. So nothing will stop you getting a great shot.



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FACE-PRIORITY AUTO FOCUS MODE

IN-CAMERA RED-EYE FIX

D-LIGHTING

HELP BUTTON

More Fun, More Freedom



High performance with a matching price tag

Canon EOS 5D

PRICE: \$4999 body only DELIVERY: \$11

SUPPLIER: www.qualitycamera.com.au INTERNET: www.canon.com.au

Although Canon describes its newest high-end digital camera as a lightweight, compact SLR, it's talking in the light of professional cameras. In usual terms, the body is large and very hefty.

The plastic body of the Labs-winning 350D (see page 70) gives way to solid magnesium alloy, bringing the weight of the 5D's body alone to almost 900g with the battery. Add the kind of lens that will do the sensor justice – we used a Canon f/4 L 24-70mm in testing – and you've got a camera weighing 2kg or more.

The headline specification of the 5D is the brand-new CMOS image sensor. Not only does this boast 12.8 megapixels, it's also a full-frame device, being the same size as a 35mm film negative at 36 x 24mm in comparison to the much smaller, roughly APS-sized sensor of most digital SLRs (approximately 25 x 17mm). This immediately puts the 5D in a class of its own, being by far the cheapest full-frame digital SLR on the market at around half the cost of Canon's own EOS-1Ds Mk II. A larger sensor can resolve more detail as well as tending to produce lower noise, but it's the primary reason for the 5D's price tag.

Other specifications are improved over the A-Listed EOS 350D too, although none are major. You do get proper 3.5 percent spot-metering capability, artificially missing from the lower-end Canon digital SLRs, in addition to the standard eight percent partial spot. Shutter speed extends down to 1/8000th of a second too, although this is only useful for minimum depth of field in bright conditions for creative purposes. Burst frame rate is still only 3fps – the same rating as the 350D and slower than the EOS 20D – although the burst buffer is far larger, with capacity for around 17 RAW frames and 60 JPEGs. In addition, the camera's ISO sensitivity can be extended up to ISO 3,200. Shots at this sensitivity suffer from the occasional hot pixel and pronounced noise, but the noise is very much akin to chemical film grain and isn't terribly distracting.

The 5D takes
CompactFlash



▲ The large mirror offers a bigger image through the viewfinder.

memory, and to get the most out of the camera when shooting in RAW mode you'll need to make a significant investment in storage. RAW files average around 12MB each, so even a 1GB card will give you only 80 shots – a 2GB card is the minimum you'll need for a day of shooting unburdened with worries of full-card messages, especially if you're taking advantage of the automatic exposure bracketing.

In use, it's the fantastically large image in the viewfinder that strikes you most. The larger sensor means a larger mirror and a much bigger, clearer preview image, making it far easier to predict how your shots will come out and improving the chances of getting the focus bang-on if you're doing it manually.

Looking at the results, the 5D excels in its ability to catch the nuance and subtleties of light. The breathing space of the larger sensor seems to make it more sensitive to catching the feel of being there; up the ISO sensitivity in low-light indoor situations and the increased noise levels are easy to ignore against the gorgeous quality of shade the 5D manages to capture with the same degree of finesse as film. It isn't completely cut and dry though. While no-one's going to sniff at a megapixel rating over the dozen mark, in many instances the absolute need for it is questionable. At lower ISO settings you'll be hard-pushed to see the improvement in detail reproduction over an 8-megapixel model when printing at standard sizes of A4 and below, but conversely, if you're a landscape photographer, there still isn't quite the level of detail that will make you think about moving from a slow 35mm emulsion or medium format.

And there are also areas where the dominance of the 5D isn't total, relative to its cheaper brethren. We prefer the 350D's top-mounted on/off switch; it's far easier to flick on than the lever-like affair mounted almost flush with the back of the 5D's body. The 350D's smaller size makes it unobtrusive and easier to keep with you at all times too. Swift operation is easy with the 350D, but try pressing the exposure lock button on the 5D while composing a shot and you could find you need to shift your hand position to support the altered balance of the camera. In addition, it's impossible for most hands to reach the ISO/drive or AF mode/white-balance buttons one-handed



▲ 12.8 megapixels and a full-frame CMOS result in some stunning images.

at the same time as turning the adjustment dial. Consequently, it's a two-step process: you press the button on top and then have six seconds during which you can re-assume a normal grip, rotate either the index-finger dial or rear-mounted rotating wheel to make the adjustment you want, and reframe the shot. It all adds up to the potential for missing photos you might have captured with a leaner device.

Make no mistake – the 5D is a fantastic camera. However, it isn't an unqualified success. Many professionals will be drawn toward either the higher resolution or faster burst rates of more expensive models, while enthusiastic amateurs will have to cope with the weight and unwieldy handling of a 'professionalised' tool. It's entirely possible to spend \$1300 on Canon's own 350D, partner it with a decent lens and be just as happy; and your hard disk won't fill up as quickly either.

David Fearon

SPECIFICATIONS

12.8-megapixel CMOS sensor; 4368 x 2912 maximum image resolution; 2.5in TFT LCD; shutter speed 1/8000 to 30 secs; 50-3200 ISO; 9-point auto focus; spot, partial, centre-weighted average, evaluative metering; +/- 2EV exposure compensation; CF & CFI cards; lithium-ion battery. Dimensions: 152 x 113 x 75mm (WDH). Weight: 895g with battery.

LABS VERDICT

With film-like ability to record light and a super-high megapixel rating, the EOS 5D is an impressive camera. But it isn't a completely unqualified success, particularly considering the price.

Performance ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

RVL

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www.albatron.com.au

Pure Gamer Platform

MB+VGA suggestion



7800GTX



- NVIDIA® GeForce™ 7800GTX GPU
- Core Clock 430 MHz; Memory Clock 1200MHz
- 256 MB, 256-bit DDR III Memory
- Superscalar 24-pipe GPU Architecture
- PCI Express with Dual DVI / VIVO ports
- Supports CineFX™ 4.0 Intellisample™ 4.0, UltraShadow™ II, PureVideo
- Supports SLI technologies



6600GT



- NVIDIA® GeForce™ 6600GT GPU (Clock 500MHz)
- 128 MB, 128-bit DDR III Memory
- Superscalar 8-pipe GPU Architecture
- Innovation PCI Express with D-Sub/ TV-Out/ DVI ports
- Supports SLI technologies
- CineFX™ 3.0 engine supports Microsoft® DirectX® 9.0c Shader Model 3.0
- Supports Intellisample™ 3.0, UltraShadow™ II
- Supports BIOS 4WD (optional)



IX915-DV



- Intel® 915PL + ICH6 chipset
- Supports Intel Pentium® 4 / Celeron® D Processor (Prescott)
- Socket 775 with FSB 533/800 MHz
- Supports Dual Channel DDR 400 Memory
- Supports 2 x PCI Express x 16
- Built-in 6 Channel AC97 Audio
- ABS (Albatron BIOS security) (Optional)
- Built-in Realtek 10/100 Ethernet LAN
- Provides 4 SATA 150 channels



KM51PV



nVIDIA nForce4 C51PV/MCP51 chipset

- Supports AMD Athlon™ 64 / Athlon™ 64 FX / Athlon™ 64 X2 Dual Core Processors
- Socket 939 with Hyper Transport™ 1000 MHz
- Supports Dual Channel DDR 400 Memory Capacity up to 4 GB
- Supports 1 x PCI Express x 16, 1*PCI Express x 1
- Integrated nVIDIA GeForce 6150 Graphics Engine, provides DVI / D-SUB / TV-out (by optional cable) interface
- Built-in 6 Channel AC97 Audio
- Built-in Broadcom 10/100 Mb/s PHY LAN
- Provides 4 SATA/II 3Gb/s Channels, SATA RAID 0, 1, 5 & 0+1
- ABS (Albatron BIOS security) (Optional)



7800GTX
"Best Performance"
OZAK
Aug 2005 New Zealand



7800GTX
"Power Award"
PC Power Play
Sep 2005 Australia



7800GTX
"Top Buy"
PC Authority
Oct 2005 Australia



7800GTX
"PC Authority"
PC Authority
Nov 2005 Australia



7800GTX
"PC Authority"
PC Authority
Oct 2005 Australia

Albatron
Australia



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Tel: 1300 855 245
www.albatron.com.au

Product brief

Brief reviews of new products, plus updates on items already featured.

Creative WebCam Live! Motion

PRICE: \$250 **SUPPLIER:** Major retail stores

This is much more than an average webcam: it comes with a comprehensive selection of bundled software, a hands-free headset and face-tracking technology.

Even without its motorised base, the Live! Motion has a wide-angle lens with a field of view of 76 degrees. Once you take the base into account the Live! Motion can look at around 200 degrees horizontally and 105 degrees vertically. The attached stand is a simple hinged affair, but it makes the camera easy to mount on a flat surface or on top of an LCD.

Image quality is good enough for video conferencing, but don't expect miracles from the 640 x 480 CCD sensor. For instance, the automatic white balance under fluorescent lighting simply didn't work, and there's noticeable barrel distortion from that wide-angle lens. We soon switched off the continuous tracking function too, as we'd sometimes move and it would stare into the distance. The Smart mode is a far better compromise, only moving to follow you once you settle into position. There are a number of features that add to the Live! Motion's attractions. Time-lapse recording may be more novelty than tool, but motion-detection software is a great inclusion for anyone who is security-conscious.

When the cheapest webcams cost less than \$30, the Live! Motion is clearly hard on the wallet. But it looks more stylish than most, and the face-tracking and motion-detection capabilities are handy. Just don't expect the image quality to rise in line with the price.

OVERALL



Palm Z22

PRICE: \$178

SUPPLIER: www.newell.net.au

A colour Palm for under \$200 sounds very tempting, but be warned: this colour screen uses DSTN technology, last seen when dinosaurs roamed the earth, which results in such slow response times that you can see each pixel being re-drawn. This lag makes the Z22 seem frustratingly slow in use, even though it's powered by a nippy 200MHz processor. And our complaints don't end there: the 320 x 320 screen may be high resolution, but the 2.4in diagonal makes it tricky to be precise with the stylus. All you get to protect the screen is one disposable Palm universal screen protector (think sticky-backed Glad Wrap), which will soon need replacing.

Another sign of this product's budget leanings is its lack of features. There's no memory expansion slot (you're stuck with 20MB available), no music-playing abilities, and you'll have to buy VersaMail or similar if you want to synchronise email. Then again, anyone who only needs to keep their calendar, contacts and tasks in sync with Outlook will be quite happy, and it's this sort of novice owner that Palm has in mind with the Z22. They should also be won over by the 15mm thickness, 96g weight and minimalist design. There's just one port, which you either plug your USB cable into or the power supply – the Z22 lasted a respectable nine hours in our continuous-use test.

Only if it's a choice between this Palm and the kind of beefed-up calculator that gets called a PDA in cheap electronics shops should you buy the Z22. Otherwise, spend the extra \$140 on the Tungsten E2 (see A-List).

OVERALL



Creative CB2530

PRICE: \$169

SUPPLIER: www.gamedude.com.au

Ridding yourself of trailing cables can only be a good thing, but have you ever found yourself wanting to break free of your headphones?

The Creative CB2530s are closed-back headphones that come complete with a Bluetooth 1.2 base station, powered by a single AAA battery. Plug the 3.5mm audio jack into your audio source, switch on the headphones (powered by a further two AAA cells), and then simply press the Connect button. The headphones themselves sound good rather than great, although there's no apparent interference or distortion. The bass is controlled and there's a reasonably clear high-end – they're also fairly comfortable, if a little heavy at 203g.

The range is enough to cover a standard-sized room, or about 10m line of sight. You'll be fine watching TV from the sofa, or on a trip from your desk to the photocopier, but sitting at the end of the garden will be a push.

We can't see many advantages to using the CB2530s routinely, but there is one major disadvantage: battery life. We matched Creative's claim of eight hours, but it's not long enough to stop even rechargeable batteries soon becoming tiresome. So while the CB2530s may come into their own occasionally, watching the clock rather spoils that new-found sense of freedom.

OVERALL



XFX 6600 DDR2

PRICE: \$219 SUPPLIER: www.i-tech.com.au

For all the excitement surrounding ATI's X1800 XT (page 47) and NVIDIA's 512MB GeForce 7800 GTX (page 48), there's an equal amount of frenzied activity at the other end of the GPU scale. ATI's X1300 Pro (page 47) is designed as a 6600 GT beater, while NVIDIA has also introduced the 6600 DDR2 card.

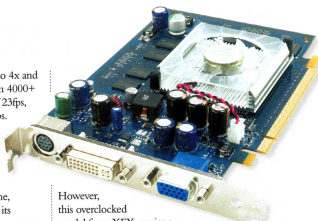
It's a step up from the basic 6600 card, and just a step below the faster 6600 GT. As the name suggests, it gets its extra oomph from the 256MB of DDR2 RAM, compared to 128MB of DDR RAM on a standard 6600. The core GPU clock is set at 400MHz, as is the memory.

It was clear from the off that the DDR2 won't cut it in games at resolutions of 1280 x

1024 and higher. With anti-aliasing set to 4x and anisotropic filtering to 8x on our Athlon 4000+ test rig, Half-Life 2 produced a score of 23fps, while Far Cry ran at an unplayable 16fps.

Dropping the resolution to 800 x 600 in both games and keeping the settings unchanged produced scores of 60fps and 37fps respectively.

With standard-clocked 6600 DDR2s selling for as little as \$154 online, NVIDIA's budget chipset isn't without its charms. If all you want to do is play games up to and including Far Cry (which comes included in the XFX box) without effects, or you can live with resolutions of 1024 x 768 and lower, the 6600 DDR2 is excellent value for money.



However, this overclocked model from XFX carries a price premium, meaning that, for this price, you'd be better off with a faster 6600 GT.

OVERALL



Optima Centoris KN Performance 5207

PRICE: \$2499 SUPPLIER: www.optima.com.au

Last month we reviewed Optima's Centoris KN Series 5185 notebook (January 2006, page 40) which offered good build quality and a decent array of features for \$1999. But 3D

RESULTS

OVERALL



BATTERY



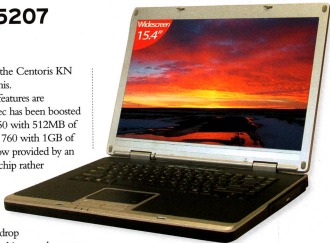
3D SPEED



performance was missing and the Centoris KN Performance series addresses this.

The chassis, screen and the features are unchanged and the general spec has been boosted from a 1.9GHz Pentium M 750 with 512MB of RAM to a 2GHz Pentium M 760 with 1GB of RAM. But the graphics are now provided by an NVIDIA GeForce GO 6600 chip rather than the poor Intel 915GM integrated set. This meant that our game tests became playable (up from under 4 fps) though you'd have to still drop the detail settings to lose any jerkiness and you can forget about playing the latest releases like FEAR and Call of Duty 2.

Battery life has suffered in the process dropping down to one-and-a-half hours intensive (half-an-hour less) and three hours light use (over two hours less). The screen isn't the best for



multimedia with mediocre viewing angles and response time, but it's useable. The 80GB hard disk and 3KG weight are the same. If you don't mind paying the premium it's a decent notebook.

OVERALL



Shure E4c

PRICE: \$439 SUPPLIER: www.jands.com.au

There's no denying that \$439 is a lot of cash, but these latest etymotic offerings from Shure deliver performance that's little short of staggering. Compared to sets bundled with digital audio players, the level of detail and clarity is a revelation. It's with this level of fidelity that you'll notice the flaws in lossy codecs, as well as the benefits of formats such as DVD-Audio. But even with 192Kb/sec MP3s, you'll hear detail in material that you never knew existed.

That's partly due to the almost eerie level of isolation the ear buds provide. We listened to a gentle acoustic ballad while at a rock concert and

then at a fireworks display, and there was barely any disturbance. On planes, trains and buses, it's incredibly satisfying to have the noise from engines and fellow travellers simply melt away.

Of course, this also means that you'll be unaware of any noise from big trucks, fire alarms and anyone of dubious intent following you, so you'll need to exercise extra caution. Between tracks, you can hear your own breathing, walking and eating, which can be quite disconcerting. Also, depending on how the various supplied attachments fit your shape of ear, you may find more than an hour of use uncomfortable.

But even with these disadvantages, a week



of listening to these earphones makes it easy to justify the price. To get anything like this quality from a fixed speaker and amp setup, you'd have to spend a lot more, making the E4c set a relative bargain.

OVERALL



Roxio Easy Media Creator 8 Suite

PRICE: \$127 UPGRADE: N/A

SUPPLIER: www.newell.net.au WEB: www.roxio.com.au



Scarcely six months have passed since the release of Easy Media Creator (EMC) 7.5, which came hot on the heels of the Roxio/Sonic merger.

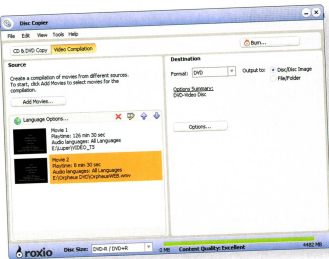
One obvious difference is that the Suite interface, which aggregates all the bundled apps together, has been completely redesigned and is now a lot neater and easier to navigate.

The organisation is similar, however, and brings the various utilities under the banners of Audio, Backup, Copy, Data, DVD & Video, Organize, Photo and Tools. As before, the sheer volume of different apps you get for the money is astounding. So to help you find what you need, each section comes with a handy guide, giving short descriptions of all the different options.

With so many applications rolled into one, EMC 8 has become even more sprawling. Thankfully, almost all the components justify inclusion. One highlight is the Video Compilation tool. This will import DVD-Video discs, Video_TS folders, DVD-Video disc images, plus DivX and WMV formats. You can then add a menu, and have EMC convert the movies into one DVD-Video disc or leave them in their original format. When importing DVD-Videos, you don't get the full

original disc contents with menus, but have to select individual titles for inclusion. Re-encoding can also take quite a while. Still, this is a great utility for bringing your favourite videos onto one disc that's compatible with set-top DVD players.

Aside from redesigning the main interface, Roxio has given the bundled MyDVD a facelift as well. MyDVD wasn't hard to use before, but there's now an Express version under the Quick DVD heading. This breaks down DVD authoring into a couple of simple actions, such as adding a new movie and changing menu styles. If you want to edit your video prior to disc creation, the updated VideoWave 8 is also included. On the surface, it doesn't look like it has changed much, with the same single video overlay track and restriction to just one video filter at a time. But it does support High



▶ The Video Compilation tool helps you aggregate favourite videos together into one DVD, and will even add an index menu for you.

Definition Video, for those lucky enough to own an HDV-capable camcorder.

The music compilation tools now include the ability to detect ID3 tags automatically after capture. This uses Gracenote's MusicID Audio Fingerprinting service, and the same system can be used for tracks taken from CD. We found it quite adept at detecting tracks that had been ripped by digital means, with a few exceptions. With analog recordings, however, it was a very hit or miss affair. New with this version, you can create DVD music discs, which allow you to put up to 65 albums on a

Nero 7 Premium

PRICE: US\$60 UPGRADE: N/A

SUPPLIER: Nero via website WEB: www.nero.com

Starting off as the disc-burning underdog, Nero's since become the standard inclusion with most burners. However, with version 7 Nero grandly boasts its software has become 'your own personal Hollywood movie studio'.

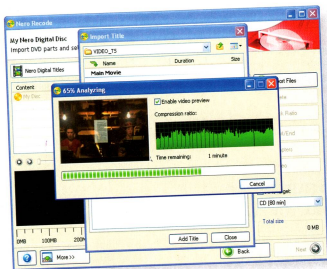
Ridiculous marketing claims aside, many of the changes to existing utilities are purely cosmetic, and many were already available in update downloads to version 6. The Start Smart front end has been tidied up, but it's much the same as before. The basic six headings are still there: Favorites, Data, Audio, Photo & Video, Copy & Backup, and Extras, although some categories have more options. The overall look of the full Burning ROM application has also been brought more up to date, but all the same buttons are there. One of the main enhancements is the ability to write to Blu-ray and HD-DVD, but given the paucity of burners, it's currently of academic interest.

The most surprising addition is accessed separately from Start Smart, however – Nero Home. This is an attempt to jump on the 'ten foot interface' bandwagon, making music, videos and photos accessible when using your PC from an armchair. It also links into Nero's new-found

▶ The Nero Recode 2 application lets you import DVDs and reconvert them to the MPEG4-based Nero Digital format.

and rather bizarre support for TV tuners. Working in tandem with the Nero Scout indexing application, once you've configured which folders Nero Scout should search for audio and video files, it indexes them for you. The results are then available from most Nero components, and there's a special entry added to Windows Explorer as well.

The Nero Digital format, the company's own flavour of MPEG4, has been extended to include video, and even includes AVC (Advanced Video Coding), also known as H.264. The company has already managed to get support into DVD players from the likes of Grundig and KiSS, so it's clearly serious about its intentions in this direction.



The Recode 2 application lets you import all manner of video files, including non-encrypted DVDs, and create Nero Digital files and discs. Video will be squashed to fit the chosen destination disc size, and the MPEG4 compression means file sizes can be a lot smaller than with MPEG2. You can even maintain 5.1 surround soundtracks.

Nero PhotoSnap, which was also added in later versions of Nero 6, is a basic image-editing application – handy for those quick cropping

DVD in Dolby Digital audio format. This can then be played in a set-top DVD player.

Elsewhere, there are a huge number of smaller tweaks in this version. You can 'Plug and Burn' from your digital camcorder, going straight from capture to disc. PhotoSuite's rigid wizard-based approach has been broken down so you can get immediate access to the toolset, although the Create Panorama utility remains a separate wizard. The LiveShare Photo Sharing system lets you share photos directly from your local PC, rather than having to upload them to an online service, and is a great idea.

If you own EMC 7.5, there aren't any must-have new features in this upgrade. But you get so much for your money with Suite 8, you only need to find a small percentage that are useful to make it good value.

James Morris

REQUIREMENTS

Windows XP SP 2 onwards.

LABS VERDICT

Another huge collection of applications and utilities. Even if you just need a few of them, it's good value.

Ease of use ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

jobs or red-eye reduction, but not much more. BackItUp, for backing up files and whole hard disks to optical media, has reached version 2. The main difference between this and the first version (included with Nero 6) is a more user-friendly interface for browsing your backups by calendar date. It also now supports backing up to an FTP site.

Nero provides a lot of useful tools in Premium 7, but nowhere near as many as Roxio Easy Media Creator 8. There isn't a huge number of new features in this version beyond interface aesthetics. For this reason, it isn't a compelling buy – especially as Roxio's suite costs only US\$20 more.

James Morris

REQUIREMENTS

Windows 98 onwards.

LABS VERDICT

Not as comprehensive as Roxio Easy Media Creator, but if you're primarily interested in burning discs then it's a cheap, simple option.

Ease of use ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

Sonic DVDit Pro 6

PRICE: \$567 **UPGRADE:** \$200

SUPPLIER: Sonic via website **WEB:** www.sonic.com

Five years ago, DVDit virtually had the DVD authoring market to itself. Bundled with numerous video-editing hardware packages, it was the semi-professional choice. Competition has increased considerably since then, and DVDit has found itself on the sidelines, with version 5 passing almost unnoticed. Thankfully, version 6 of DVDit is an even bigger upgrade.

The interface will be almost unrecognisable to older users, with the look and feel now in line with current user-interface trends. Functions are separated into a plethora of floating windows, some of which are tabbed. The Project window aggregates the menus, movie titles and playlists; and the Preview window doubles up for menu design and watching your movie clips.

The Timeline is reminiscent of a full video editor, and assets are now held in tabs in the Palette. The Attributes window brings together controls such as remote button routing, which were previously found in their own sections. To help with arranging these, workspace presets are included for five tasks, and you can save your own custom workspaces across dual monitors too.

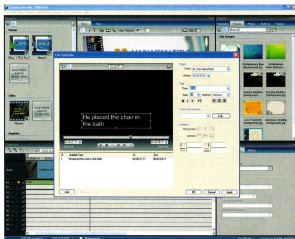
There's now extensive subtitling and multilingual support. The Pro version reviewed here has eight audio and 32 subtitle tracks, although the standard edition (\$432) offers just bilingual audio. Subtitles can be added from external text files, which can then be edited within the Sonic interface, or typed out from scratch within DVDit.

The Slideshow Wizard now supports up to 999 images rather than just 99, changes to their duration and music soundtracks. However, you can still only have one kind of transition between slides unless you choose the Random option, which still doesn't give you any control.

A useful new feature for corporate video makers is the ability to create playlists, which is again available only in the Pro version. If you're making a DVD full of lots of little videos, you can aggregate any number of them together under different playlist headings. For example, an estate agent could put all the properties in one area under a single heading and DVD menu button.

When importing video assets, chapter markers in XML format can also be brought in, but only from Avid video-editing applications that have MetaSync support. Other editing software isn't catered for, and we found DVDit couldn't import markers created by Matrox's RTX100 real-time MPEG2 exporter, for example.

Although DVDit can't compete with Adobe Encore DVD's Photoshop integration, it does



▲ Powerful subtitling and multi-language support alongside a brand-new interface make DVDit 6 a major upgrade.

now recognise layered PSD files in a limited way.

Earlier versions of DVDit and MyDVD included simple Dolby Digital audio encoding, but DVDit Pro adds full 5.1 surround support. You can also add Region encoding, CSS and Macrovision encryption, plus output to DLT tape for professional mastering. The Pro version also bundles eDVD 4, which lets you create InterActual discs. These are DVD-Videos with interactive features, such as web links. It also includes a built-in player, although users will have to supply their own MPEG2 decoder.

With so much choice now in the DVD-authoring world, DVDit really needed something radical to put it back on the map. Fortunately, Sonic has delivered it. DVDit 6 finds the middle-ground between the over-complication of Adobe Encore and the more prosaic Ulead DVD Workshop. Aside from the welcome inclusion of eDVD and the subtitling abilities, DVDit doesn't really win out on features, but it's very intuitive, with enough design control to create attractive DVD menus. If you'd lost interest in DVDit, now is the time to take another look.

James Morris

REQUIREMENTS

Windows XP SP 2; Windows Media Player 10.

LABS VERDICT

A vast improvement over version 5 with a flexible and productive new interface, DVDit is back into contention for semi-professional DVD authors.

Ease of use ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★

Music maker's dream

Sibelius 4

PRICE: \$895 UPGRADE: \$399

SUPPLIER: Sibelius Australia 08 8277 1722 WEB: www.sibelius.com



If one music-notation package can lay claim to being the industry standard, Sibelius is it. Humble beginnings on the Acorn platform didn't deter many composers and arrangers from choosing it in favour of the more established competition, and since its port to Windows in 1998 (and Mac in 1999) it's become standard issue in both professional and academic circles.

It's not hard to see why. The attention to detail in every aspect of score design and formatting is beyond rebuke. The result is an application that not only gives users meticulous control over the notation process, but also makes that process amazingly efficient.

There are three key areas that facilitate this. One is superb automatic layout. Give Sibelius notes to display and it will do so clearly

'The attention to detail in every aspect of score design and formatting is beyond rebuke.'

and attractively, whether they're melodies with lyrics or complex polyrhythms and note clusters. Bars automatically expand and contract to suit the overall page layout, and the software will even align rests to the bottom of the page to help with page turns.

There are a few areas in which the automatic layout needs a little help, such as when notes or other markings on one staff clash with those in the staff above or below, or when dynamics markings clash with low notes. It's a little

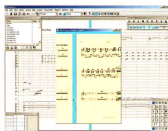
disappointing these aren't remedied automatically, but this also highlights another of Sibelius' strengths: virtually unlimited customisation. If you don't like the position of something, whether it's a note, dynamic marking, staff or complete system, simply drag it to a new location.

Customisation isn't limited to moving single objects either. Sibelius' rules for automatic layout are available for editing, right down to the defaults for positions of time signatures and the curvature of slurs. There's support for alternative note heads, free rhythm bars, rehearsal marks, ossia staves, guitar TAB, accordion fingering – basically, everything we could think of is there, plus plenty more besides.

The third key ingredient to Sibelius' success is its elegant user interface. The ability to drag any object to a new location may lead you to think this is a mouse-driven interface. Certainly, the mouse is well used, but it's the wealth of keyboard shortcuts that gives Sibelius its lightning-fast operation. Click a letter from A to G to add a note, S to add a slur, H for a hairpin crescendo. Note input is also possible with the mouse, via a MIDI keyboard or by importing a MIDI file. Of these methods, the MIDI keyboard proved most efficient. Sibelius' MIDI file import would benefit from some quantise and note overlap removal options – we found that imported data tended to produce complex, messy scores that were easier to redo manually than to tidy up.



▲ The Worksheet Creator is a library of teaching aids, from tests to creative exercises.



▲ Use Dynamic Parts to extract parts for performers that reflect changes in the main score.

Similarly, changing note values and adding and deleting objects in a part does the same on the score. However, changing the position of objects in the part doesn't affect the score. As such, it's possible to optimise a score for the conductor and the parts for the performers – perhaps expanding complex bars in the parts but keeping them compact in the score. It's also possible to hide objects in either the score or the parts, which is ideal for providing cues in parts.

Teachers will delight in the Worksheet Creator, a collection of more than 1700 teaching aids including notation and music theory tests, creative exercises and worksheets. Answer sheets are available where applicable, some of the worksheets have randomly generated questions and they're all editable with Sibelius' usual score-writing tools.

Also new is video playback for scoring to picture. The video preview is synchronised with the MIDI playback, and dragging the playback locator scrubs through the video. It's a shame there's no facility to adjust the tempo automatically to line a hitpoint up with a specific beat, though. The video soundtrack can be mixed with the built-in Native Instruments synth, which does a good job of playing back scores.

Sibelius' depth means it can take months to master, but the excellent Flash tutorials mean beginners will be up and running within a day. The software is predictably expensive for a specialist product of this calibre, but if you're serious about score production, it's well worth the investment.

Ben Pitt

REQUIREMENTS

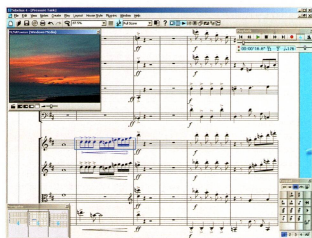
Windows 98 SE onwards.

LABS VERDICT

Sibelius manages the remarkable feat of making professional score production easy. Inspired new features make this an essential upgrade.

Ease of use ★★★★★
Features & Design ★★★★★
Value ★★★★★

OVERALL ★★★★★



▲ Sibelius combines intelligent automatic layout with extensive customisation possibilities, making it quick to produce scores exactly to your liking.

Having already honed score design to near-perfection, version 4 concentrates largely on ancillary features. However, this doesn't stop them being both well executed and hugely beneficial. The highlight is Dynamic Parts. Being able to extract parts from a full score is an inherent benefit of any notation software, but Sibelius 4 takes this concept a stage further. Rather than extract a part, edit it and save it as a different file, parts are now embedded in the main file, which means that any changes made to the score are immediately reflected in the parts.

Simply making movies

Adobe Premiere Elements 2

PRICE: \$145 UPGRADE: N/A

SUPPLIER: www.advancesoftware.com.au/pca WEB: www.adobe.com/au



Video editing has become easier through the years, particularly with the advent of FireWire and real-time effects. But it's still very time-consuming and a process only true hobbyists will persevere with. Fortunately for them, when Adobe released Premiere Elements last year it targeted above the entry level, so it wasn't as hamstrung by aiding the complete novice as Pinnacle or Ulead's low-cost options. Thankfully, this second version doesn't change that.

The interface itself hasn't changed much, although Adobe has realised that the floating windows in Elements 1 were too much of a legacy of the professional Premiere heritage. The rigid contextualised workspaces of version 1 could also be limiting, particularly the separate editing, effects and advanced effects modes.

'Adobe has realised the floating windows in Elements 1 were too much of a legacy of the professional Premiere heritage'

Elements 2 glues all the various palettes together within the application, and unites both the editing and effects modes into a single Edit mode. You can still resize windows and drag palettes around, or remove unused palettes.

The result is somewhat busier than before but, once you're used to it, more convenient. Apart from capture and DVD output, you can now spend the majority of your time without having to switch context. The Effect Controls palette is always available, but has become the Properties window. It changes its contents with context, and

▼ The new Edit mode includes all the controls you need to trim clips and add effects in a fully customisable interface.

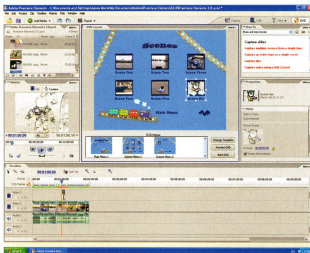
in Edit mode includes Image controls as well as Motion and Opacity. The Image controls allow immediate access to brightness, contrast, hue and saturation settings. The Opacity section now adds quick fade-in and -out tools, although you can still create your own custom ones using transparency rubber bands on the timeline. Under Motion, there are quick rotation buttons for use with non-4:3 footage shot on different devices, such as mobile phones.

Capture mode no longer pops up a new window. Instead, the workspace is rearranged to accommodate it. This mode still only supports FireWire camcorders, but it's no longer the only way to acquire footage. As well as allowing you to import already captured footage, the Add Media button can call up the new Media Downloader. This is used for bringing in clips from optical discs and removable drives, including DVD-based and USB 2-attached camcorders. Native file format support includes 3GP and 3GPP2, ASF, MPEG1, 2 and 4, and even the MOD files created by JVC's Everio camcorders.

The MOD and VOB files are conformed to regular MPEG for editing and saved to a temporary folder on a local hard disk. These files can be given a sensible name as they're imported via the Media Downloader. However, HDV is conspicuous by its absence. Adobe told us it didn't think the demand was there yet, but it's certainly a checkbox missing, especially when compared to the forthcoming Avid-powered Pinnacle Studio 10 and Ulead's MediaStudio Pro 8.

Like the capture applet, the title and DVD menu creation tools are embedded into the workspace rather than on pop-up windows. Where Elements 1 merely allowed preset templates, version 2 offers more control. As well as changing text, you can now move and resize both text and buttons, with automatic warnings when you accidentally overlap clickable elements. You can even create motion menus and buttons.

Elements 2 has a number of useful smaller additions as well. The Effects palette now includes handy icons to help you find the right filter or transition. Category buttons for Video, Audio, Transitions and Favorites are also found along the top for easier navigation. The Project Archiver is an entirely new tool. This allows you to save everything you've used in a project



▲ The built-in DVD authoring allows you to move and resize text and buttons, plus create motion menus and buttons.

to another folder, such as on an external hard disk. You can either archive just the media you ended up using in the finished project, or everything that was imported.

Since its release, Adobe claims Premiere Elements has grabbed 30 percent of the global market, despite being aimed at a higher level than Pinnacle Studio or Ulead VideoStudio. Although it's priced a little higher, it isn't astronomical. You can also purchase it bundled with Photoshop Elements 4 (see A-List) for \$222, which makes for particularly good value. No low-cost upgrade to Premiere Pro is currently available, although Adobe told us it was being considered.

Although Premiere Elements 2 doesn't add any huge new features, the subtle usability changes are welcome. Its more powerful integrated DVD authoring and wider editing format support bring it much more in line with consumer editing requirements. And it remains a lot more powerful than any other editing app below \$200. So unless you're aiming to become semi-professional, the chances are Premiere Elements will be the only video-editing software you need.

James Morris

REQUIREMENTS

DirectX 9 graphics; Windows XP SP 2.

LABS VERDICT

Many small improvements make for a much more mature interface. It still isn't for beginners, but if you're after editing power at a reasonable price then look no further.

Ease of use	★★★★★
Features & Design	★★★★★
Value	★★★★★

OVERALL ★★★★★

Corel Photo Album 6 Deluxe Edition

PRICE: US\$45 UPGRADE: N/A

SUPPLIER: Corel via website WEB: www.corel.com

When Corel took over JASC to get its hands on Paint Shop Pro (January 2006, page 54), it also inherited Paint Shop Pro Album, a standalone application aimed at digital camera users. The program's great strength has always been the simplicity of its interface built around four main tabs – Organize, Enhance, Create and Share – each offering clear access to a limited range of button-based commands.

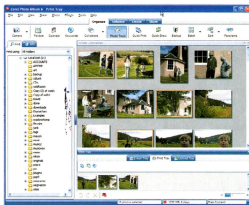
When you first load the application, the new Photo Finder offers to find all photos from across your entire system or from selected directories. And when you connect up your camera, Photo Downloader offers to download all images to an automatically named directory, rotating photos as it goes if your camera supports the feature.

Once photos have been imported, they automatically appear as thumbnails in the Organize window, where they can be viewed by directory, ad-hoc collection, keyword or date. The underlying thinking is similar to that of Photoshop Elements 4 (see A-List), but with no visual tagging or wall calendar view, for example, the implementation is nowhere near as smooth or rewarding. We do like the new Photo Trays feature, though,

which lets you quickly drag multiple photos to an area at the bottom of the screen for later emailing, uploading or printing.

A new Quick Print command lets you output multiple prints per page in the most common photo sizes. If you want to move beyond standard printing, the options under the Create tab have been extended and now include new options such as collages, magazine covers, awards and certificates. Also, there are plenty of templates and the ability to produce web galleries and burn basic slide shows to VCD. And Photo Album now keeps track of which photos have been archived to CD and reminds you when it's time to back up.

That just leaves the Enhance tab, but that's a major disappointment. You can crop your images, manually remove red eye and, using the tabbed Adjust command, control exposure, contrast, colour balance, saturation and sharpness, but it's awkward and the preview is much too small. Otherwise, all that's on offer is a pathetic selection of special effects. It's fine in combination with Paint Shop Pro X, as advanced editing is just a click away, but Corel Photo Album 6 is too basic



▲ Drag images into the Photo Tray for later use.

for its own good and simply isn't powerful enough for standalone use.

TOM ARAH

REQUIREMENTS

Windows 2000/XP (SP 2).

LABS VERDICT

Easy to use and it has some nifty features, but editing power is disappointing.

Ease of use



Features & Design



Value



OVERALL



Ulead PhotoImpact 11

PRICE: \$90 UPGRADE: \$50

SUPPLIER: Ulead via website WEB: www.ulead.com

PhotoImpact has always tried to help the non-expert user make the most of their camera and enjoy themselves in the process. And the program's interface has seen a complete overhaul in this release, with redesigned icons, toolbars and palettes.

Newcomers can take advantage of Basic Photo mode (commonly useful tools), while Advanced Mode means all power is at hand. You can even create your own mode. This is a nice touch, but a residue of indecipherable command icons and idiosyncratic filter dialogs means there's still work to be done.

In terms of dedicated photo management, Ulead bundles Photo Explorer 8.6, which provides folder browsing and album management along with the odd advanced feature such as VCD output and RAW/DNG support. In addition, PhotoImpact offers its own dedicated File Browser; this supports camera downloading and EXIF data display, and you can now apply effects and corrections directly from the EasyPalette.

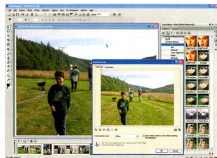
PhotoImpact offers a comprehensive, if rather odd, set of corrections and filters. Two of the better new options correct the purple fringing caused by chromatic aberration and white-balance problems, while a third

lets you add subtle vignette effects. More fundamental is the new support for high-end 48-bit images, although this only applies to the most common adjustments. For 24-bit photos, PhotoImpact offers its High Dynamic Range command, which lets you process multiple exposures of the same shot to generate maximum tonal range in both shadows and highlights. The new SmartCurves command attempts to do the same for single images based on known camera response curves or on customised profiles.

PhotoImpact also tackles image compositing, with a new Object Extraction Wizard for pulling complex objects out from their background, plus layer mask handling. There are also some unique montaging capabilities. Its existing Z-Merge capability adds apparent depth to your compositing, while SmartRemove makes it easy to remove or combine elements from multiple versions of the same shot.

PhotoImpact offers both good value and some surprising power. However, competition is fierce and most users would gain greater benefit from the more focused Photoshop Elements 4 (see A-List).

TOM ARAH



▲ Powerful compositing tools and filters offer a surprising amount of control.

REQUIREMENTS

Windows 98 SE onwards.

LABS VERDICT

A quirky and powerful alternative to Photoshop Elements 4, but it isn't as easy to use.

Ease of use



Features & Design



Value



OVERALL



Safe Offsite SOS Windows Client 1.2.66.2

PRICE: From \$45 (200MB storage) annually **UPGRADE:** NA

SUPPLIER: Safe OffSite via website **WEB:** www.safeoffsite.com.au

SOS's goal is to provide safe, simple and efficient offsite backup via the Internet using a combination of differencing, compression and encryption. This allows the recovery of multiple versions while minimising data traffic and storage space.

The client software presents three steps to protection: select files, schedule backup, and backup now. Our favourite method for selecting a file or folder is to right-click an item in Explorer and select Protect with SOS, but there's also a tree view within SOS, a drag-and-drop interface, and options to help choose common folders and filetypes. Unwanted file types (for example, MP3) can be excluded from backup.

Scheduled operation eliminates error-prone human involvement. SOS offers daily, weekly or monthly backups, and once that's set just leave the computer switched on and logged in, though we found scheduled backups only happened if the Perform Missed Backups option was selected.

SOS mostly worked well, but it would erroneously detect changes in certain files occasionally, generating a new version during each backup. We recovered two versions – a straightforward process – and confirmed the

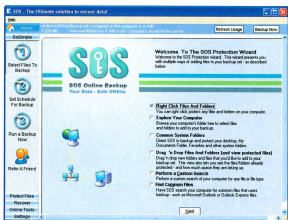
contents were identical. Safe OffSite has traced the problem to a Windows API function and is testing an alternative.

There are some cosmetic blemishes, such as displaying the elapsed time as '3:2' instead of '3:02', additional SOS icons appearing in the system tray during manual backups and not disappearing until the mouse rolled over them, and a default window size that's just too small for some of its content. However, given the rapid development by the team at SOS, many of these bugs could be ironed out by the time you read this.

Safe OffSite also provides web access to protected files, making it easier to recover files after a disaster and permitting sharing with other people.

The software is generally easy to use and is affordable for saving essential data such as a small business's accounting files, uni assignments, your unfinished novel or a modest digital photo album.

Stephen Withers



REQUIREMENTS

Windows ME, 2000, XP, and Server 2003.

LABS VERDICT

A low-cost way of securing smaller quantities of data. Future versions have A-List potential.

Ease of use



Features & Design



Value



OVERALL



HE WOULDN'T USE A FLOPPY WHEN HE COULD USE A USB KEY.

www.itsuper.com.au



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McAfee Wireless Home Network Security 2006

PRICE: \$51 **UPGRADE:** N/A

SUPPLIER: www.newell.net.au **WEB:** www.mcafee.com/au

As wireless in the home becomes more prevalent, so do concerns about security, and McAfee's latest foray into the consumer security market tries to tackle this. Assuming that your router and network cards are supported, that is – the McAfee website has a compatibility list. Even if yours is on it, you may still need to update the router to the latest firmware.

After installation, McAfee scans for any unprotected WLANs within range and offers to secure them. The process involves a few key clicks entering passwords, and completes within minutes. As this product is aimed at the wireless security illiterate who hasn't changed the default router password nor SSID, if your neighbours happen to have a similar router with the same unchanged defaults you could find yourself unwittingly securing their network and locking them out. Using a non-default and non-obvious SSID during the process will avoid this potential problem.

McAfee also offers the option of secure key rotation during installation, preventing the hacking of static keys. This is hard-coded for a three-hour rotation cycle. Better than none at all, and fine for WPA, but not so good for WEP. And if you add

a non-Windows device to the network, like a PDA, the key rotation gets disabled.

There's also the issue that McAfee has chosen to default to a WEP installation.

To get proper WPA and WPA2 protection, you have to manually change the settings. So what's the difference in doing this with your router interface and doing it through someone else's software? Fifty bucks and an ongoing \$20 annual subscription.

It's the value proposition that sits worst of all with us. Fifty dollars gets you a five-year licence, but the average home-computing setup isn't likely to need this. Setting up WLAN security needn't be difficult these days. Ten minutes and several dollars invested on the technical support line should get you around any hiccups that do occur.

Ultimately, it's more effective and often easier to brave your router's interface, use WPA, hide the SSID and enable MAC address filtering. Then buy a decent Internet security suite such as ZoneAlarm (see-A List).

Davey Winder



▲ See how secure your wireless network is at a glance, and then let McAfee try to protect it.

REQUIREMENTS

Windows 98 SE onwards.

LABS VERDICT

It might be a nice idea to make securing your wireless network a simpler task, but if you can get the most out of this product you know enough not to need it.

Ease of use



Features & Design



Value



OVERALL



MindMapper 4.5 Professional

PRICE: \$180 **UPGRADE:** \$60 (from version 3)

SUPPLIER: www.essentialmindmapping.com

If you're one of those people who constantly has ideas and then writes them down on random bits of scrap paper or types them into hastily-created text files saved in spurious locations on random computers, then MindMapper could be for you. New features in version 4.5 add several new collaboration and scheduling functions. But what does it do?

Essentially MindMapper is a blank screen.

On this screen you can simply start typing your ideas on an unlimited white space. If an idea is connected with another you can link the two with various arrows. You can also put each entry into a different container – like a cloud or arrow.

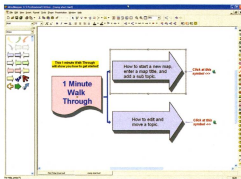
Others may prefer to make workflow diagrams – ideal for project management. If you've a scheme to organise you can have sequential branches emanating from a central point and assign each a date. A timeline is shown at the top.

In practice it's very simple to just open and use and instructional videos, replete with animations, are included too. However, it's not the most polished application – the icons and interface aren't up to the polished standard that MS Office has got us used to. The timeline isn't the easiest to discern from a quick glance and the sheer number of toolbars and windows take some getting used to. The large number of drop down menu

commands and instructions like 'Floating Topic', 'Relation' and 'Scenario' also take some getting used to. But if you put the time in, the results can be rewarding.

When you're at the stage where everything you need is laid down in one place you can export to various MS Office applications, via dedicated icons. These launch small wizards which offer (what are initially confusing) options on how you want data transferred. In Word, our three-tiered branch structure, on a first attempt, reappeared as a confusing list. With a bit of work it appeared as a slightly less-confusing list. Clicking on the Outlook icon transfers all scheduled data to Outlook's Tasks area. You can also export to MS Project, though if you own that you probably won't be using this.

All in all, if you're fed up with you or your company's organisational data and you have found other software wanting, MindMapper is a decent bet. It's \$800 less than MS Project and PC Authority readers save an extra 10 percent by quoting the code, 'Urban' when purchasing. Ultimately, though, MindMapper finds itself in the peculiar situation where it requires a significant investment in time and effort to make the most out of it – something that the target market generally won't have – unless



they buy MindMapper. But it's a good bet for those familiar with project managers and those wanting to upgrade.

Nick Ross

REQUIREMENTS

Windows 98, 2000, XP, NT

LABS VERDICT

If you're prepared to put in the time, MindMapper could sort out the lives of busy and/or creative people.

Ease of use



Features & Design



Value



OVERALL



Your face is your key

Recognix FaceCode

Price: US\$30 **Upgrade:** N/A **Supplier:** Recognix via website

Price: www.face-code.com

One day, biometrics could be a part of everyday life. With so many logins and passwords required for everything from chat forums to bank accounts, the average PC user is drowning in security details. Instead of having to remember deliberately obscure alphanumerical strings, biometrics offers the option of tying security to something you'll never forget – your finger, your eye or your face.

So far, however, biometrics has remained the domain of the corporate user. Fingerprint readers have been included in premium iPAQ PDAs and IBM ThinkPads but aimed at security-conscious businesses. Recognix hopes to change all that and bring biometrics to the masses. With a copy of FaceCode and any webcam capable of 352 x 288 in RGB_24 format or better, the company claims you can add facial-recognition security to any Windows 2000 or XP PC.

FaceCode is currently a download-only product. You can try out a 14-day evaluation version, after which a permanent keycode is a relatively inexpensive US\$30. When you first load the software, it goes through a video-capture device detection wizard. We tried a few options, including camcorders attached via FireWire and USB. None of these were passed as compatible

'With so many logins and passwords required for everything from chat forums to bank accounts, the average PC user is drowning in security details.'

by FaceCode, but when we called upon a Philips SPC300NC/00 USB webcam, we were in business. Most current webcams support the required resolution and capture format, so should work with the software.

Once FaceCode has configured itself with your webcam, the next step is to add the administrator's face to the database. You can theoretically enroll

▼ **The enrolment takes up to eight images for use as references during facial recognition.**



an unlimited number of users, but each one must be linked to a pre-existing Windows account; you can't add an entirely new user within FaceCode. After filling in the correct text password for your chosen administrator username, you're led through facial enrolment. This takes eight mugshots and performs some algorithmic analysis of them. You then choose to exclude any aberrant images – for example, if you looked away momentarily. Once you've enrolled your first user, you'll need to reboot to enable FaceCode Windows login. This can either work on its own or you can specify to add the Windows username and password for extra levels of security.

However, this is where our problems began. After rebooting, the FaceCode login crashed with a Visual C++ error, and we could only get into the PC after disconnecting the webcam. Fortunately, FaceCode has a hot-key system for just such a problem, where you choose a secret combination to recall the standard Windows username and password login. This is reassuring, but of course

reduces the security of the system, as anyone who knows the combination can avoid the facial-recognition system entirely.

We discovered that our problem was because this version of FaceCode isn't compatible with PCs connected to a Windows network. This also meant we couldn't add any more users after the administrator on our test PC. So we installed the software and webcam on a non-networked PC instead and found facial login worked fine, as did enrolling new users.

However, a forthcoming Pro version will support network PCs. Slated to be available by the time you read this for around US\$40, FaceCode Pro will also add a host of new features. Protect Application Launch and File/Folder Protection functions will allow you to facially control access to these resources on an individual basis. You'll also be able to back up and restore your enrolled face database. Best of all, it will include a Password Bank for storing all your online logins under one face. A standalone version of the Password Bank will also be available for US\$20.

The current limitations are a shame, because the underlying technology shows promise. Like any



▲ **Using spectral pattern analysis, FaceCode recognises your features as an abstract range of frequencies and tries to match them against its database.**

biometric system, FaceCode works by a process of pattern recognition. It starts off with raw images of the subject's face, then reduces these to templates with the required size, colour and density. The BioCode image-processing system then breaks these down into a range of frequencies according to their Fourier spectrum amplitude. The FaceCode system works on the theory that the human brain performs similar frequency analysis during pattern recognition.

Nonetheless, FaceCode certainly recognised faces quickly and rejected any that didn't match. We also tried enrolling photos of people and found the pattern recognition worked with these as well. But photos of already-enrolled real faces weren't recognised, so this can't be used to circumvent security. Recognix also claims that recognition is possible even if you change your hairstyle or grow a beard, so long as 60 percent or more of your face remains the same.

FaceCode is certainly interesting technology, but the annoying lack of network support leaves this initial version limited in usage. The Pro version's greater range of features will make it a much more appealing proposition, for businesses as well as home users. Meanwhile this initial version of FaceCode offers a cheap entry point to biometrics.

James Morris

REQUIREMENTS

Webcam with 352 x 288 resolution and RGB_24 support; Windows 2000/XP.

LABS VERDICT

The recognition technology is fast and accurate, but its lack of Windows networking support dents its appeal.

Performance	★★★★★
Features & Design	★★★★★
Value	★★★★★

OVERALL ★★★★★

Download

Davey Winder reviews five essential ZIP archiving programs.

7-Zip

PRICE: Free **DOWNLOAD FROM:**
<http://sourceforge.net/projects/sevenzip>
DOWNLOAD SIZE: 1.02MB

**BEST
OF THE
BUNCH**

This open-source archiver is built around the new 7z compression format, which until recently had the highest ratio of all (until WinRAR came along). Expect results to be between 25 and 50 percent smaller than a standard ZIP archive, and expect them to be quicker as well. But don't expect a slick UI like WinRAR, nor Windows integration to WinZip standards. However, we'd choose 7-Zip every time. It has good legacy-format support, can be operated from the command line, comes complete with AES-256 encryption and costs nothing. The real jewel in this crown is that open architecture, which means it will support any new compression methods that appear. This proves that looks aren't everything—that epithet belongs to features, and 7-Zip has them in spades.

OVERALL

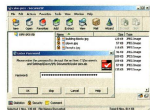
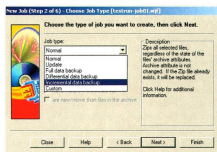


WinZip 10 Professional

PRICE: US\$50 **DOWNLOAD FROM:** www.winzip.com
DOWNLOAD SIZE: 5.32MB

The latest version of the original ZIP archiver sees the birth of a new Professional option. At US\$50, it's asking a US\$20 premium over the standard version, but you do get some impressive automation tools for the money. The Job Wizard enables the creation of ZIP jobs for any repetitive archiving task, but the ability to perform incremental backups to CD/DVD or automatically by FTP makes it ideal for off-site archiving. Jobs are highly configurable, can be scheduled and support full AES encryption. Both versions get faster compression and smaller files, as well as a snazzy new Explorer interface for digging around inside archives. It can't beat WinRAR for compression ratio or value, but if job automation is important look no further.

OVERALL



SecureZIP

PRICE: US\$100
DOWNLOAD FROM: www.pkware.com
DOWNLOAD SIZE: 8.35MB

Phil Katz developed the original ZIP format in the 1980s as a DOS command-line app, then Windows and WinZip came along and stole its thunder. SecureZIP takes encrypted compression into a whole new zone, adding strong encryption, either passphrase-based or public key-enabled. By adding digital signing and authentication, integration with both Outlook and Lotus Notes, and sysadmin-friendly touches for security policy enforcement, SecureZIP is ideal for the business network market. On the consumer and small-network front, it still has to compete with WinZip's 256-bit AES encryption and WinRK with a choice of 128-bit block ciphers. For most users, home or business, that level of encryption is more than adequate.

OVERALL



WinRAR 3.5

PRICE: US\$29
DOWNLOAD FROM: www.win-rar.com
DOWNLOAD SIZE: 1.1MB

WinRAR is one of the fastest compression utilities available and still holds its own when it comes to archive size. There's support for just about every format, including legacy options, so you should be able to pack/unpack just about anything. The 40-day evaluation period and the paid-for licence that entitles you to all future program updates free of charge are both appreciated. We particularly like the instant recognition of multimedia files and the automatic selection of the most suitable compression method. Security isn't overlooked either: 128-bit encryption and authenticated signature support come as standard. Neat touches like graphical reporting tools and self-extracting file creation make this a premiership player.

OVERALL



WinRK

PRICE: US\$30
DOWNLOAD FROM: www.mssoftware.co.nz
DOWNLOAD SIZE: 2.6MB

With WinRK, you don't get the same legacy format support as WinZip, and the extensive configuration options are confusing by comparison. Your reward, though, will be the best compression ratios bar none. Opt for standard ZIP64/WinZIP AES-compatible archives and they'll be ten percent smaller than the competition; opt for the proprietary RK format and they can be 50 percent smaller. Of course, it takes time to get the world's best compression ratio (more than an hour to reduce a 40MB file collection into a 3MB miniature), but there's plenty of scope to balance the trade-off between speed and size. A good GUI and solid encryption round off an exceptional package, which is spoilt only by the value proposition of open-source products like 7-Zip.

OVERALL



Does Microsoft conquer all?

[PREVIEW]

Internet Explorer 7 (Beta 1)

Internet: www.microsoft.com

Included as a standard component of Windows Vista Beta 1, the newest version of Internet Explorer is the only major application to be overhauled for the beta release. But the new version of the world's most-used web browser won't be restricted to Vista only: Microsoft has already released a developer-only beta for Windows XP.

In true Microsoft magpie fashion, the major addition to IE 7 is a feature that's been a great success on competitor browsers Opera and Firefox: tabbed browsing. This addresses the classic problem of ending up with a dozen or more separate browser windows when you're going down a list of search hits and want to open prospective relevant pages without navigating away from

magnanimously included AOL, Ask Jeeves, Google and Yahoo! Search too.

CSS support has also been vastly improved, with the fixing of some major bugs and a commitment from the development team to making the new browser behave in a much more standards-compliant fashion.

Microsoft also appears to be going all-out in embracing transparent PNG (portable network graphics). This open-source compression format is aimed at replacing JPEG files,



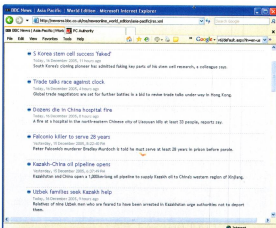
▲ IE 7 adds tabbed browsing and a configurable search box.

'tabbed browsing and the perception of better security were arguably the biggest draw to those who switched to Firefox'

the search results. The system works identically to Firefox; a click of the middle mouse wheel or a Ctrl-left-click automatically opens the link in a new tab. The only enhancement over its competition in this regard is a permanent blank tab to the right of all other tabs: clicking this opens a new blank tabbed window – Firefox requires you to hit <Ctrl-T> (this same shortcut works in IE 7).

A second major feature lifted directly from the competition is the search box in the top right-hand corner of the screen. You can enter your search terms directly, and then choose which search engine to send them to via the drop-down list to the right. MSN Search is the default option of course, but Microsoft has

▼ RSS support in IE 7 makes information easier to access.



which are surrounded by intellectual property rights issues.

Not surprisingly, security is a prime concern. The design of IE 7, claims Microsoft, marks a change in attitude to security holes. The sheer amount of code in Internet Explorer has meant that, up until now, Microsoft's approach has been to shy away from major rewrites, papering over vulnerabilities with patches as and when they were revealed. Microsoft claims to have changed tack, rewritten a significant proportion of the application and 'drastically reduced the internal attack surface'. It's a lovely phrase – but we'll only be able to see if it's worked once IE 7 becomes mainstream.

This isn't the only security enhancement that's in the works either: in Protected Mode, IE is completely isolated from the rest of the PC and unable to access the local computer's

resources directly. All requests from Internet Explorer to the local system pass through a broker process. Crucially, this broker process can only be activated as a direct result of the user clicking on menus and screens, making it much harder for malware to attack.

Microsoft is also forcing all pop-up and browser windows to have an address bar, so people will be less easily duped into visiting a fake website – for instance, the front page of a bank – if they can see the exact URL they're visiting.

With Protected Mode enabled

in IE 7, phishing – conning users to click on fake links and infect their own machines – will likely become the number one focus of data criminals. To bolster efficiency in weeding out phishing sites, the finished build of IE 7 is slated to include a Phishing Filter that will constantly update itself with details and URLs of known phishing sites.

Microsoft also claims a 'streamlined, redesigned user interface', but places the caveat that it's 'currently in its early stages in Beta 1'. The interface is a little strange in that the standard toolbar containing History, Home, Favorites buttons can't be moved – in contradiction to most Microsoft applications.

The Back and Forward buttons are given a great deal of prominence and have the same look and feel as those in Vista's standard Explorer windows.

This edition of IE certainly isn't the sea change that marked, for instance, the introduction of IE 4 back in the late 1990s; not yet, anyway. But tabbed browsing and the perception of better security were arguably the biggest draw to those who switched to Firefox from IE 5 or IE 6, and there's every reason to believe that with all the feature boxes ticked the flow of defections will be stemmed. As such, Microsoft's competitors may need to get their thinking caps on and come up with a new killer feature.

David Fearon

REQUIREMENTS

Windows 2000/XP

PROSPECTS

Nothing you haven't already seen in other browsers, and there remains much work to be done, but this latest version brings Internet Explorer up to speed on features.

Your free, fully-featured office

OpenOffice 2

PRICE: Free UPGRADE: Free

SUPPLIER: OpenOffice via website INTERNET: www.openoffice.org



We've always been impressed by OpenOffice. Not because it's better than Microsoft Office – it isn't.

Not because it's better looking than Microsoft Office, either. Again, it isn't. What's kept us hooked over the last few years, as it's crept to the point where the two are now all but neck and neck on features, is the extraordinary value for money. It's completely free.

OpenOffice runs on Windows, Linux and Solaris, and comprises the usual raft of office applications, with a word processor (Writer), spreadsheet (Calc) and presentation module (Impress) at the fore, backed up by database and drawing tools. All can import Microsoft-formatted files to an impressive degree, and can be set to export in Microsoft native formats for use in mixed-suite environments.

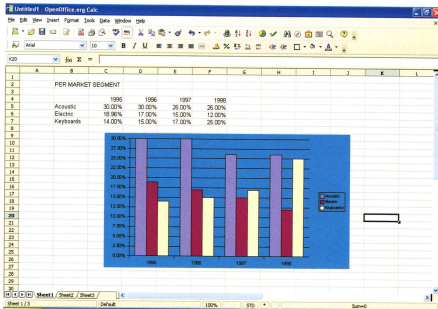
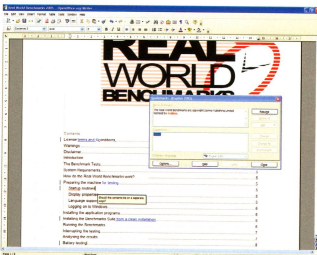
This latest release has been a while in the making, so we were keen to see how it compared with the previous edition as well as the commercial StarOffice, designed for larger organisations (see below).

WRITER

Writer, along with Calc, is inevitably what people will use most. To test compatibility, we loaded up a complex Word 2000 marketing document, making full use of Microsoft Word's formatting options, with complex composite images made up from tiled GIFs overlaid by markers, shaded boxes and a wide range of font and paragraph styles.

Without exception, Writer picked them all up, perfectly mimicking the Word original and placing them all in line – something we've

▼ There are many similarities to Microsoft Word in Writer, making it simple to switch between them.



▲ Calc is much improved, but its charting tools aren't as slick as those of Microsoft Office, especially compared to Office 12 (see page 101).

never seen before. The only difference was the way Writer showed us the edges of image frames, which by default are invisible in Word, and isn't a problem as they won't print.

It didn't do quite so well when we tested more esoteric formatting options in a document of our own creation. A rotated JPEG was straightened, pushing down some of the text that should have appeared beside it, while a vector image had lost its colouring. An

embedded chart was properly rendered, though, and our garish sample of WordArt was rendered in the same colours and size in Writer as Word, although the edges of the characters were more jagged in OpenOffice's version.

However, its WordArt equivalent – which it calls Fontwork – is far more accomplished, with a dedicated 3D panel giving you access to a raft of extrusion options, and even control over lighting from any one of eight directions.

What we were

most impressed by though, were the built-in image-editing tools. Certainly, they won't put Photoshop out of work, but when unleashed on a photo they let you set transparency and apply a range of surprisingly sophisticated filters. The former option will be useful if you want to reduce the impact of an image you're setting under text, while the latter lets you sharpen blurred images, blur sharp ones, tweak individual colour channels and even remove noise in badly compressed snaps. And that's before you get into the less tasteful options.

We were pleased to see that OpenOffice has moved the Wordcount option from a subsection of the file menu, where it always looked out of place. Also impressive is the revamped Mail merge, although it still lags behind Microsoft Office for simplicity.

CALC

The spreadsheet has been beefed up, now holding twice as many rows as it once did (now 65,536 to match Excel), but its charting tools could still do better. If you're starting graphs from scratch, there's no cause for complaint. But if you're importing a graph from Excel, we found that the most extreme value on the Y-axis was never high enough to stop it shearing off the top of the highest peak. Unfortunately, this spoiled an otherwise excellent effort that saw the graph retain the smooth curves we had set in Excel – lesser suites opt for simple lines at angles to one another.

Likewise, while it did put our chart on a

StarOffice 8

PRICE: US\$70 Enterprise versions from US\$35 depending on quantity

SUPPLIER: Sun via website **INTERNET:** www.sun.com

StarOffice 8 is built on the same open-source code base as OpenOffice 2 and, with the two offering near-identical features, you might wonder why you should pay for something you could otherwise download for free.

When developing a new version of StarOffice, Sun takes a 'snapshot' of the OpenOffice code, and bolts on additional features that can't be given away. Often these are licensed from third-party manufacturers, such as font foundries, and in the past these added extras included the Adabas database component, which was absent from OpenOffice 1 and 1.1.

Sun therefore positions its product to appeal to organisations and consumers who are after a multiplatform alternative to Microsoft Office, as distinct from OpenOffice, which it sees as a product for independent developers, the open-source community and users of free software.

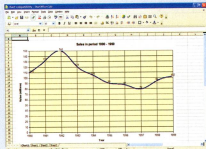
To this end, StarOffice includes more extensive bought-in spellcheckers and mail-merge features, fonts that are metrically equivalent to those found in Windows for use on other platforms (particularly useful since Microsoft stopped offering free downloads of its core fonts a few years ago, as these had always been a boon for Linux users),

migration tools for documents and macros, and a wider range of document templates and import filters for Asian-language files.

This is on top of the features that go beyond the budgets of the OpenOffice developers, such as CD-based product updates, warranties and round-the-clock support. Fortunately, many of the tech-support features are mirrored by the active OpenOffice user base, to the extent that Sun's formalised offering is an unjustifiable extravagance for most home users. Ad-hoc add-ons such as this aren't just for OpenOffice users, though, as Sun itself incorporates community-developed features into its commercial product, such as the Flash export options in Impress.

The deciding factor for high-end users will be how they intend to apply their existing macros to their latest installation. StarOffice ships with a Macro Migration Wizard that relies on an API layer absent from OpenOffice, in which translated macros may fail to run. This can be fixed through the addition of Sun's special Migration Tools licence for OpenOffice, which costs money and defeats the purpose of going open source.

If your company relies on a sophisticated roll-out backbone,



▲ StarOffice is built upon the same code as OpenOffice, but includes a number of extras designed for businesses.

and your clients demand access to SharePoint servers, then it's Microsoft Office all the way. If, on the other hand, you want a lighter, cheaper option that offers 90 percent of Microsoft's features and adds in an extra 20 percent of its own, there are many good reasons to buck the industry trend here and now.

REQUIREMENTS

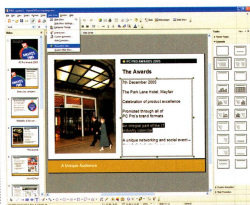
Windows 98 onwards.

LABS VERDICT

There are few reasons to choose StarOffice over OpenOffice for non-business users, but the low price and support make it tempting for businesses of all sizes.

Ease of use	★★★★★
Features & Design	★★★★★
Value for money	★★★★★

OVERALL ★★★★★



▲ OpenOffice's equivalent to PowerPoint, Impress, looks incredibly similar to Microsoft's offering.

dedicated page, it wasn't an unlined charting page like the ones in Excel, but an empty-boxed spreadsheet.

Conditional formatting holds greater promise. We set up a simple spreadsheet in Excel that would switch the colour of negative figures to

red. Opening it in Calc brought forth no surprises. Whether or not you like the way in which you have to establish new formatting rules when doing this from scratch, though, depends on how you feel about style sheets. Whereas Excel presents you with a simple, unified dialog combining a field into which you enter your condition with a standard font and colour picker to define the styling, Calc expects you to have first set up the style you want to use in the Styles and Formatting palette. This is good because it ensures well-thought-out results that will present well when printed alongside other spreadsheets using the same styles, but at the same time it's inconvenient, as you have to look at more than one palette to define the conditional formatting you want to apply.

Grouped cells import well, and we actually prefer Calc's implementation to Excel. Where the latter puts the expansion and contraction button for revealing hidden cells in the margin of the last column or row in the

group, Calc places it alongside the first. Excel's implementation lines up your expansion point with the first exposed cell outside of your defined group, which is illogical, whereas Calc very clearly indicates the point at which the group stops as being the border between the last cell in the group and the first cell outside of it. This comes into its own where you have positioned two grouped sets beside each other, in which case with Excel you're more inclined to open the wrong one.

We were also highly impressed by the Function Wizard, which is more extensive than that provided by Excel, and once you've picked your function acronym it matches Excel's walkthroughs.

IMPRESS

Impress is OpenOffice's presentation module, and we again found little to fault in terms of PowerPoint compatibility. With a reorganised interface, which was something we criticised in the previous release, it even feels like you're using Microsoft's market leader. We imported a short presentation using far more styles and transitions than you should ever inflict on

An alternative to Microsoft? Simon Jones offers a second opinion

StarOffice 8 is certainly a more mature product than version 7, and it appears competent in many areas. The database component is a welcome update and should be easy to use for people familiar with Microsoft Access. However, it relies on the Sun Java Runtime Environment, so won't be as fast as a database built on native or managed code. Java is used for many components in StarOffice and Microsoft's Java implementation (the Microsoft Virtual Machine) isn't supported. If you don't install Sun's Java, those features won't work on your machine.

Writer, Calc and Impress have all had a cosmetic revamp as well as getting new and improved features. Impress is more usable and friendlier, especially with the new multipane view as seen in Microsoft PowerPoint. Unfortunately, the range of templates provided is still rather poor.

Calc is capable but the charting isn't as flexible as in Excel. Calc's equivalent of PivotTables are reasonable, but you still can't have live charts of Microsoft's implementation.

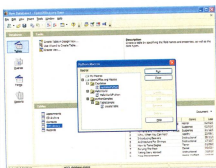
The word processor is adequate but overcomplicates some things. The Mail Merge Wizard, for instance, has many tedious steps, some of which are completely irrelevant.

Improved compatibility with Microsoft Office files is a big

plus-point but there are still instances of files that won't display the same in StarOffice as they do in Microsoft Office. The new file formats, adopted as a standard by the OASIS organisation, hold promise for the future being completely XML based, but unlike the Microsoft Office XML file formats, they don't allow you to embed your own custom XML schemas.

The new MSI-based installer should make for easier deployment in a corporate environment but there aren't tools available to control the use of StarOffice through Group Policies. There are tools to migrate documents and macros from Microsoft Office to StarOffice, but the StarOffice macro language still lags badly compared to Microsoft Office VBA, and converting existing documents isn't a quick or easy job, even with a tool to help.

StarOffice still doesn't have an email/PIM application equivalent to Outlook and it isn't nearly as friendly as Microsoft Office. The price is good but standard or premium support contracts for corporate users cost more. Microsoft Office 12, due in H2 2006 has a new and improved UI, as well as a host of new features. StarOffice 8 will have a limited time to impress before Office 12 hits the shops.



▲ OpenOffice now includes a database app, and it supports MySQL and Access formats too.

a captive audience, and Impress swallowed them without a pause for breath. Previous editions had trouble replicating certain PowerPoint transitions, but even the 'box in' and 'checkboxerboard across' wipes were properly imported, and matched the original for speed and orientation. Indeed, the only criticism we could throw its way was the same as for Writer: WordArt was slightly better rendered in PowerPoint than it was in Impress.

Custom animations run to an impressive 51 entrance and exit settings. Like those in PowerPoint, these are separated into plain English categories such as basic, exciting or moderate, to help avoid presentation embarrassments. There's also a healthy selection of motion paths, since you're denied PowerPoint's tool for defining a path of your own.

THE VISUALS

Beyond core features, the suite as a whole has been given a lick of paint, with a new interface that finally makes it look like an accomplished set of co-ordinated apps. Granted, it still isn't

as pretty as Word and Excel, but neither is it as clumsy as WordOffice 7 or OpenOffice 1.

The menus have had a rethink, and the suite as a whole takes its design cues from the OS, so it finally looks like a 'proper' Windows application.

The suite-wide file format has changed, too, moving towards open standards. It has switched to the OASIS OpenDocument schema, as supported by IBM, Novell and Red Hat, which make up the OASIS consortium. It's open source, which could be enough to ensure widespread adoption, making it more likely that this could become the industry standard in years to come, particularly as the European Union has welcomed it (along with the new XML format in Office 12) as the basis of all cross-platform document use.

Of course, there are quirks. We don't like the way it resolves file-sharing conflicts by opening a file in read-only mode without warning. When it does, it blocks you from making edits, so you won't lose any work, but at the same time it's unable to tell you who is working on the file in question the way Microsoft Office would do, so you can't chase them down and get them to close it.

Likewise, Australia takes a back seat in terms of templates; though there are presets for Korea, China and a range of European countries, we get lumped in with the US, which opts for letter-size paper rather than A4, for example.

There's also no PIM, but with Outlook Express bundled as part of Windows, and Mozilla touting its Sunbird (calendar) and Thunderbird (email) applications, the gap isn't impossible to fill.

Fortunately, the suite's bundled database is adequate compensation. It's fully conversant in MySQL and Access formats and the Form Wizard will now produce cross-platform

database applications, saving you the time and expense of hard-coding from scratch.

Overall, we're both surprised and impressed at just how closely OpenOffice is tracking Microsoft here. It has always been a good alternative for anyone with limited funds or an aversion to the market leader, but more often than not you'd have to work hard to justify to an IT department why they should go down this route. In this latest release, with its close-to-seamless recognition of native Microsoft files and integrated PDF creation, the tables have turned, and it's Microsoft Office that should require the more serious justification where budgets are concerned.

For personal use, there are even fewer reasons to choose Microsoft. OpenOffice certainly doesn't lack features compared to the market leader, and most of its ease-of-use issues stem from people's familiarity with Microsoft Office rather than an inherent problem with the program itself. As such, you should certainly try OpenOffice's offering before donating another \$200 or more to Microsoft's coffers. After all, it's free.

Nik Rawlinson

REQUIREMENTS

Windows 98 onwards.

LABS VERDICT

Our pick of the low-cost office suites has had a much-needed overhaul, and now battles Microsoft in terms of features, not just price.

Ease of use	★★★★★
Features & Design	★★★★★
Value for money	★★★★★

OVERALL ★★★★★

PRICE: See Features & Pricing opposite **UPGRADE:** Via Software Assurance for SQL Server 2000
SUPPLIER: Microsoft 13 20 58 **INTERNET:** www.microsoft.com/sql

www.pcauthority.com.au February 2006 PC AUTHORITY 67

'Microsoft has made many enhancements to SQL Server to improve its already impressive uptime.'

rewrite, taking the look and feel of Visual Studio 2005. Management Studio is easy to use and powerful. As well as allowing full manipulation of all diagrams, tables, columns, functions and security features, there are a host of useful reports about the state of the server and the transactions it's running.

CHANGE OF SERVICE

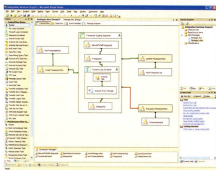
The Service Broker is a new feature for storing message queues in SQL Server. It brings new T-SQL statements to send and receive messages, giving you a reliable, persistent communication channel between two parties. The Broker can be used between two apps on the same SQL Server instance or across multiple instances and multiple servers. It can be used to implement asynchronous triggers or to collect data from remote sites where communications may be patchy. With a secure message queue built into the database, it's easy to set up apps such as these without having to implement a separate service such as MSMQ.

The old Data Transformation Services (DTS) has been rewritten and is now known as SQL Server Integration Services (SSIS). This has a new extensible architecture and can cope with jobs that DTS would have found difficult or even impossible. SSIS has a new designer in which you drag and drop sources, tasks and destinations and join them together to describe data flows

for loading, transforming, cleaning, aggregating, merging and copying data. SSIS packages are easy to build and schedule and fast to run. They're also flexible. There's a Migration Wizard to convert old DTS packages into SSIS, but sometimes the migration won't be 100 per cent automatic and intervention will be required.

SQL Server Analysis Services has also been rewritten, making it easier to create, deploy and manage business intelligence solutions. The BI Development Studio is integrated into Visual Studio 2005 with templates and wizards to get you started quickly. Point the BI Development Studio at your database and it will quickly identify facts and dimensions in all the tables and build cubes to suit. You can rename dimensions and facts to make them easier to understand by end users, and you can easily group dimensions into hierarchies. Analysis Services can be used to design Key Performance Indicators (KPIs), which you can then expose through Reporting Services or Microsoft's new Business Scorecard Manager. If you have databases that use the old version of Analysis Services, a Migration Wizard will help you convert them to this new format.

Reporting Services is the least changed of all the services, but it still has some nice features. Users can change the sort order of the data while viewing a report. They can also print reports directly from



▲ SQL Server Integration Services makes Extract, Transform and Load operations easy and fast.

Internet Explorer and a new Report Builder module allows end users to design their own reports based on models provided by a more skilled report designer. You can now have multivalued parameters to reports, giving more flexibility in selecting what data to report. Designers can also set hidden parameters that end users can't change but the designer is able to set programmatically.

AND FINALLY...

Significant improvements have been made to the replication of data between servers, including new security and manageability enhancements and a new Replication Monitor. Transactional and snapshot replication is supported from Oracle databases and there's improved support for non-SQL Server replication subscribers. Subscribers can now replicate data using HTTP, which is useful for Windows Mobile devices.

As well as the new Management Studio, there are tools for configuring SQL Server, tuning the database engine, profiling the performance of SQL Server and Analysis Services and Importing and Exporting data.

SQL Server 2005 is a hugely capable database system. The price has gone up compared to the 2000 version, particularly for the Enterprise Edition, but you still get a huge amount for your money. Analysis Services and Integration Services are the most obviously changed, but every area has been improved, from pure database engine performance to security of data replicated to far-flung clients. SQL Server 2000 was a great database platform; SQL Server 2005 is outstanding.

Simon Jones

REQUIREMENTS

Windows 2000/XP/Server 2003.

LABS VERDICT

A massive overhaul that brings tangible benefits both in terms of features and ease of use. The non-Express versions are expensive, but still deliver good value.

Ease of use ★★★★★
Features & Design ★★★★★
Value for money ★★★★★

OVERALL ★★★★★

Features and Pricing

The good news is that per-processor licences only count the physical processor sockets. Hyper-Threading, dual- or multicore processors still count as one. Management Studio, integration, analysis, reporting and notification services are all included in the price.

Whether you buy a processor licence or CALs depends on the number of users or devices you want to connect. The breakeven point is usually about 25 CALs for Standard and 75 CALs for Enterprise. After that number, it's generally cheaper to licence per processor. You can start with a

single-processor licence, even on a multiprocessor system (choosing which processor SQL Server will use), and add an extra licence later if you need extra performance.

If you go down the CAL model, you have to choose whether to buy CALs for users or devices. If several users share each PC (shift work in a factory, for example), you'd choose Device CALs. If a user uses several devices - such as a desktop, laptop and a PDA - you'd choose user CALs. One SQL Server CAL is about \$250, but the prices can come down significantly the more you buy.

	Express	Workgroup	Standard	Enterprise
Max processors	1	2	4	Unlimited
32-bit	✗	✗	✗	✗
64-bit	✗	✗	✗	✗
Max RAM	1GB	3GB	Unlimited (64-bit)	Unlimited scale & partitioning
Max DB size	4GB	Unlimited	Unlimited	Unlimited
Management tool	Express Manager	Management Studio	Management Studio	Management Studio
Reporting services	✓	✓	✓	Advanced
Replication subscriber	✓	✓	✓	✓
Replication publisher	✗	Limited	✓	Advanced
Import/export	✗	✓	✓	✓
Backup log shipping	✗	✓	✓	✓
Database mirroring	✗	✗	✓	Advanced
Integration services	✗	✗	✓	Advanced
Notification services	✗	✗	✓	Advanced
Analysis services	✗	✗	✓	Advanced
DB snapshots	✗	✗	✗	✓
Price per processor	Free	\$1079	\$10,453	\$43,552
Server and CALs price	Free	\$1076 (Server + 5 CALs)	\$3214 (Server + 5 CALs)	\$24,336 (Server + 25 CALs)

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Advanced NeoTitanium Tri-Array™ speaker technology for accurate, balanced and natural sound

Powerful wooden subwoofer with a huge 6.5" long throw driver for louder and deeper bass

Dual-flared port for lower and cleaner bass response

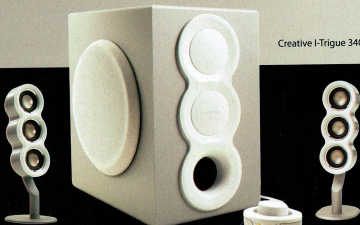
Wired remote control with a large, easy to manage volume dial and bass level control for personalised adjustment

Auxiliary input with exclusive cable for easy connection to your portable audio player

Video game adapter for instant connection to your home entertainment device



Creative I-Trigue 3400



Bass level control

Headphone jack for private listening

Auxiliary input with exclusive cable for easy connection to digital audio player



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Digital SLR cameras

Now's the time to upgrade your compact digital to an SLR. We put all the entry-level models to the test.

If you're a keen photographer, you'll know that several digital SLRs have recently been launched at bargain prices. We've already covered a couple of them, but prices have now dropped even further to the point where you can buy a Nikon D50 with an 18-55mm lens for just \$1200.

It's unbelievable really. Earlier this year Canon's 350D launched at a price of \$1900. Today, you can buy it for \$600 less. It's fantastic news for those wanting to upgrade from their compact digital to a camera that allows more creativity, better quality and a big range of lens and flash options.

The five models here include a lens, but you can opt for the body only if you want to choose a different focal length, or already own one. The cameras range from 6-megapixel to 8-megapixel and, while they provide all the manual control you need, the controls look and function much like a compact, so you'll be able to shoot from the word go.

SLRs offer many advantages over a compact camera, but they also take away a couple of features you'd expect to be there, and that's why we've included Fujifilm's latest FinePix S9500 Zoom in this Labs. You won't spot it easily, since it looks just like the others, but it retains all the benefits of a compact. For more details, see Focus on... compact vs SLR on page 75.

One final point to bear in mind before shelling out: leave room in your budget for a high-capacity memory card. None of the cameras here come with any usable amount of storage, but thankfully a 1GB card won't set you back much more than \$150 – we take a look at a couple on page 74.

Contributor Jim Martin

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How we test

The ultimate purpose of any camera is to take great photos and this is why image quality is our overriding concern when testing them. We take a series of identical photos to allow comparison between each camera, testing every aspect of image quality. These include colour accuracy, saturation, exposure, colour fringing and dynamic range.

We test each camera with its kit lens, but naturally, lens quality plays a big part in the overall quality. You may find a camera performs better with a different lens. Since it's impossible to test all lenses, the results here can only be used to assess quality of the camera with the bundled lens.

All shots are taken at the highest-quality JPEG setting, with default settings except where noted. We use a tripod for every comparative shot, to eliminate camera shake and ensure the sharpest possible photos. However, in addition we also take a selection of shots on each camera without a tripod, using it in real-world situations to see whether exposures are generally accurate and also to find out what each camera's strengths and limitations are in terms of handling and usability.

The outdoor shot is taken on a cloudy but bright day with the majority of the frame covering a dim garden corner, but with bright light in the top corner. This tests each exposure system and dynamic range.



▲ We used EV compensation to ensure highlights weren't blown out, then assessed colour accuracy, resolution, blooming and fringing.



▲ Resolution and saturation were important in assessing the macro shot. Also, each kit lens's minimum focus distance was judged.

We set each zoom to its widest setting, and in each camera's aperture priority mode we choose $f/11$ where available (the Fujifilm only runs to $f/8$). We also force the lowest ISO setting and ensure the metering system is evaluating the whole frame, not just the centre or a spot area. Most of the cameras needed EV compensation of around -1 to avoid blowing out highlights.

The macro shot is a test of the bundled lens' close-up capabilities, as well as the camera's ability to resolve detail. We set each camera to program auto mode, only having to select macro mode on the Fujifilm. Again, we set the zoom to its widest position. As outdoor macro shots can be hampered by the slightest breeze, we were careful to wait for calm moments before releasing the shutter.

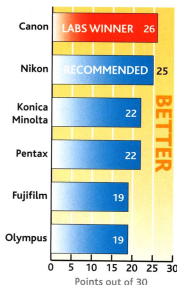
For the indoor shot, we set up a still-life scene incorporating coloured and reflective objects as well as a variety of textures. We light the scene with incandescent bulbs since this is the most common type. We leave white balance set to auto to test the system and set each camera to $f/8$ in aperture priority mode. We use the self-timer to make sure we don't shake the tripod when depressing the shutter.

We take a second shot with this setup, using the flash with the default compensation setting. Again, we leave white balance set to automatic,

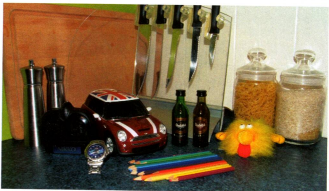
since you shouldn't have to switch manually to the preset flash white balance to get great results.

For our low-light night shot, we take the cameras out to the city. We shoot at each camera's lowest ISO setting as well as up to ISO 800 to find out how effective each camera is at keeping noise out of images at higher sensitivities.

Overall Quality



▲ Ability in low light was the focus of our night test, similar to what you see here. We tested various ISO settings.



▲ This was a test of auto white balance under tungsten lighting as well as an assessment of resolution and noise.

Canon EOS 350D

PRICE: \$1297

SUPPLIER: www.camerafarm.com.au

Since our original review several months ago, the EOS 350D has held onto its A-List status without a problem. It's the smallest and lightest of the group, and yet battery life is still excellent – we were able to shoot hundreds of frames with flash use and image reviewing between charges. Build quality is on a par with the solid Nikon D50, although ergonomically the latter is superior thanks to a bigger handgrip.

We like the fact that the mono display is above the main 1.8in LCD (which is a touch small). It's backlit and means you don't need to look on top of the camera, as with the D50 and *ist DL, to check settings. Menu navigation buttons double as main functions when shooting, providing instant access to ISO, white balance, exposure compensation, metering and focus modes. It's a shame you have to use the LCD (instead of the mono display) to change some of these, and it's also annoying that there's no spot-metering mode.

Startup is instant and the EOS 350D will shoot at 3fps for 14 frames in JPEG mode or four in RAW – this is a major advantage over slower cameras like the



FinePix S9500.

Of course, with a Canon EF lens mount, you can access the huge range of high-quality, reasonably priced Canon lenses as well as third parties like Sigma and Tamron. The bundled kit lens offers an 18–55mm zoom and can focus down to 28cm. The highlight, however, is the 8-megapixel CMOS sensor, which distinguishes it from all but the Olympus and Fujifilm here.

You really can see the difference in resolution when viewing images at 100 percent, but this is only useful if you want to crop a centre portion. For printing at anything up to A4, it will be hard to notice the difference between this and the 6-megapixel cameras on test.

Overall, the 350D produces well-exposed images under any circumstances. The kit lens isn't as sharp as the Nikon's, but you'd only tell by comparing photos side-by-side. In low light, images were usable up to ISO 800 – noise was kept to a minimum, and much less noticeable than

with the Olympus. The built-in flash provides great results, never leaving images with a washed-out look and eliminating red eye.

Our only real problem was white-balance accuracy. Compared to the Nikon, which kept every image neutral, we saw slight colour casts in almost every situation. Of course, you can shoot in RAW mode and set the balance afterwards using the supplied software.

It's virtually impossible to choose between the 350D and D50, as they're both excellent, albeit in subtly different ways. The Canon's extra price reflects the included RAW editing software, and with a higher resolution, more-affordable lenses and features like a backlit LCD it wins by the smallest margin.

LABS VERDICT

The benchmark against which every other entry-level digital SLR is gauged.

Quality of software	★★★★★
Features & Design	★★★★★
Value for money	★★★★☆

OVERALL

★★★★★

Fujifilm FinePix S9500 Zoom

PRICE: \$855

SUPPLIER: www.imtechnology.com.au

As the S9500 technically isn't an SLR, some may feel it shouldn't be in this test. However, with a price that puts it in direct competition with the others on test here, Fujifilm is clearly aiming this model at the same audience.

With a sensor resolution of 3488 x 2616 and a versatile lens which, in 35mm terms, equates to 28–300mm, the S9500 beats everything else on test. The non-removable lens means dust will never get on the sensor, and you can still use filters.

The S9500 also lets you frame shots with the (admittedly small) 1.8in LCD. It flips out, allowing you to frame from high or low angles – a tricky prospect with an SLR. A quick look at the specifications shows that not much is given away to dedicated SLRs: you can shoot in RAW mode, there's ISO selection from 80–1600 and full manual control.

Weighing in at 766g, the S9500 is light enough and comfortable to hold and use. It's well built, and most buttons you'd want are

present, with other functions easily reachable via menus. Menus are relatively intuitive, although the setup options are buried too deep for our liking.

Power comes from four AA batteries, which is a blessing and a curse. Alkaline replacements are always available, but don't last very long because of the LCD and EVF (electronic viewfinder) constantly draining them. No rechargeables are included.

Image quality is respectable, but it doesn't quite match the others models on test. The small sensor is partly to blame: while you can select up to ISO 1600, noise is still significantly more noticeable than with the other cameras at equivalent settings. Resolution isn't as good as the 9-megapixel rating would suggest either, although this is partly the fault of the optics, as the images have soft focus.

This was true with our indoor shot too; looking close up, detail is much fuzzier than the 6-megapixel Nikon. We were fairly impressed with the auto white balance, though, and flash performance was also fine. Outdoors, the Fuji produces good exposures with natural colours. Macro performance will beat all others, as it can focus down to just 17mm.

Another bonus is the ability to shoot unlimited-length VGA video clips. But if you want to be



creative with stills, the minimum aperture of f/11 is too big. We don't like the focus-by-wire approach, and prefer an optical viewfinder too. Add the relatively slow operation when shooting and reviewing images and we can't recommend the Fujifilm.

LABS VERDICT

Image quality isn't as good as it should be from the 9-megapixel S9500 and it doesn't handle as well as an SLR. If you want to shoot video, use a separate camera.

Quality of software	★★★★☆
Features & Design	★★★★★
Value for money	★★★★☆

OVERALL

★★★★☆



Konica Minolta Dynax 5D

PRICE: \$1177

SUPPLIER: www.camerafarm.com.au

Another new entry-level DSLR to hit the market, the Dynax 5D is Konica Minolta's attempt to woo compact users to upgrade to an SLR.

On initial handling, you can't escape the feeling that the 5D's build quality and materials don't quite match the Nikon or Canon. The mechanical clank of the shutter isn't subtle either. And rather than being a pop-up affair, you have to physically lift the flash up when you need it. As it doubles as the AF assist lamp, it's just one more job to do that could mean you miss the shot.

But, there's plenty to like about the 5D. For a start, it's well designed: your forefinger falls naturally on the jog wheel, letting you make quick adjustments without taking your eye away from the viewfinder. Plus, you can set the LCD to display exposure information just like the Olympus – and it automatically rotates when you rotate the camera and dims when you put your eye to the viewfinder.

However, the 5D relies on an inconvenient

additional menu screen for making some of the adjustments shown – you have to push the Fn button (similar to Pentax's) for access to focus, metering, flash compensation and colour adjustments.

Two interesting features on this camera are the white-balance command dial and the anti-shake technology. The former lets you quickly select between auto, manual, colour temperature and preset balances. Frustratingly, you still have to select which preset you want from a menu, and the ability to select the precise colour temperature (in degrees Kelvin) won't be useful to many photographers.

Anti-shake is more useful – it works well to compensate for shaky hands at slower shutter speeds. As it's the sensor that moves, it's compatible with all Dynax lenses. Image quality matched the Pentax overall, with consistently good exposures in most lighting conditions, though in low light, the 5D overexposed images, so some EV compensation was needed. Noise at ISO 800 was slightly more noticeable than the Pentax, but not as bad as the Olympus.



The auto white balance didn't cope with tungsten lighting as well as the Nikon, but if you shoot in RAW mode this won't pose you any problems, and you can fully

adjust RAW files in the bundled software. We were happy with saturation and contrast in our tests.

Overall then, the Dynax 5D has plenty of features on offer and is a good alternative to the winners.

LABS VERDICT

The 5D offers plenty of features, even if some are harder to get at than we'd like. With good image quality, it's a great alternative choice to the winners.

Quality of software ★★★★★

Features & Design ★★★★★

Value for money ★★★★★

OVERALL

★★★★★

Nikon D50

PRICE: \$1207

SUPPLIER: www.camerafarm.com.au

Picking up the D50 after the EOS 350D, you get a sense that build quality is a step up. You don't really notice the extra 93g, as the grip is more comfortable – there's more room for fingers between the grip and the lens. The D50 is also available in black or silver.

Function buttons are sensibly laid out, although there aren't all that many of them. This means that some functions, like metering mode, are hidden away in menus, but this is because the D50 is aimed at those used to point-and-shoot compacts.

A couple of features are missing too. There's no sports mode on the mode dial, and no mirror lock-up function to eliminate shake when shooting macro, for example. On the software front, only a trial of Capture 4.2 is included. This means you'll need to shell out an extra \$150 if you want to be able to edit your RAW files.

However, there's plenty to like about the 6-megapixel Nikon, which makes a worthy alternative to the Canon. For a start, it offers a spot-



metering mode (the 350D doesn't) and shows ISO and white balance in the top mono display, whereas the 350D makes you look at the LCD. The Nikon's LCD is also slightly bigger at 2in, making it better for reviewing images.

We're big fans of the kit lens too. It matches the Canon's 18-55mm zoom range, but tends to produce sharper images, even if the final image resolution is lower. However, other Nikon lenses generally cost more than Canon's. We also liked the fact that Nikon's 3D Matrix Metering II is very hard to fool, allowing you to get great exposures even in tricky lighting situations.

While most DSLRs take CompactFlash, the D50 (and *ist DL) use SD cards. This is good if you already have some, but SD cards still cost more per gigabyte than CompactFlash or Microdrives. You'll have no problems with battery life, though – it's better than the Canon and will



allow well over 1000 shots between charges. And, in addition to sharp shots and consistently great exposures, the Nikon has a good auto white balance and produces amazingly realistic colours. We saw oversaturation on occasion, but a quick trip to the Image Optimise menu lets you choose presets for the scene you're shooting. Noise was almost as low as the 350D, so shots are usable up to at least ISO 800. Plus, there was virtually no fringing to be seen.

Those concerned by burst modes will note the D50 is slightly slower, but it's a minor point overall. And at \$1207, the D50 has a noticeable price advantage if you already own software that can edit RAW files.

LABS VERDICT

A better kit lens than the Canon, better ergonomics and a lower price mean the D50 is an excellent alternative, if you're not bothered by the lack of RAW editing software.

Quality of software ★★★★★

Features & Design ★★★★★

Value for money ★★★★★

OVERALL

★★★★★



Olympus Digital E-300 Kit

PRICE: \$1089

SUPPLIER: www.camerastore.com.au

The E-300 is one of the oldest models on test and uses the Four-Thirds lens mount, which is a relatively new system developed by Olympus, Fujifilm and Kodak. It means there isn't a wide choice of lenses available yet – by comparison, Nikon and Canon have a massive range on offer.

A bigger problem for some will be the E-300's looks. While aesthetics aren't everything, this is clearly the ugliest digital SLR we've ever seen. It's longer and shorter than others because of the odd mirror system, which directs the image to the side before upwards, resulting in an off-centre optical viewfinder. It's also the heaviest here, tipping the scales at a whopping 935g.

The 14–45mm kit lens may sound wider than others, but this is due to the 2x focal length multiplier – it's 28–90mm in 35mm terms.

Oddly, focus isn't truly manual – the ring is electronic and you have to use the menu to switch focus modes. It works, but takes longer than focus than



others. Our final gripe is the lack of a full printed manual – you'll have to view the manual on CD for advanced functions.

What we do like is the exposure and other information shown on the 1.8in LCD. Every off-used setting can be changed without trawling through menus – you simply hold down the relevant button and rotate the jog dial. It's only a shame the dial is on the back rather than the front; your thumb can't hold down a button on the right as well as rotate the wheel.

We also like the self-cleaning sensor, which literally shakes any dust off. This is good news, as it means there's less chance of you damaging it. Like the Dynax 5D, you can choose a colour temperature from a range, but we found the auto white balance did a good job.

However, image quality was average. Resolution was disappointing considering the

8-megapixel sensor; the Canon's images were much sharper. Colours and saturation were fine, but in low light, the E-300 always wanted to underexpose images. You have to enable the ISO boost option in the menu to access anything over ISO 400, and we can see why. Noise at ISO 800 was more pronounced than any other camera – we'd only use images taken at up to ISO 400.

Ultimately, there's no contest between the Olympus and Nikon. The D50 has better image quality, is lighter and offers a wider choice of lenses.

LABS VERDICT

One of the cheaper digital SLRs, but it's heavy, ugly and doesn't offer excellent image quality despite the 8-megapixel sensor.

Quality of software	★★★★☆
Features & Design	★★★★☆
Value for money	★★★★☆

OVERALL



FOCUS ON... continuous shooting

Rather than relying on manufacturers' figures, we tested continuous shooting speed by taking ten frames at the best JPEG setting available. You can see the results in the graph below. With the fastest cameras able to shoot continuously at up to 2.4fps, it's important that your flash memory card stores those photos as quickly as possible. Once the camera's high-speed internal memory buffer is full, the continuous shooting speed is then down to the flash memory card's performance.

We asked Crucial and SanDisk to each send us a 1GB CompactFlash and 1GB SD card so we could pit them against each other to find out whether their individual performance affects continuous shooting.

SanDisk opted to send its Ultra II cards, claiming that most of the entry-level cameras here won't benefit from the extra speed of the Extreme III range. Crucial doesn't offer 1GB cards in its high-speed range, so sent us standard cards.

Unusually, both SD and CompactFlash cards cost similar amounts – Crucial's CF and SD cards cost \$98 and \$104 respectively while SanDisk's cost \$141 and \$145.

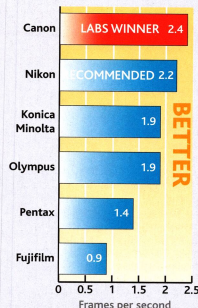
You'd expect some significant performance benefits from SanDisk's noticeably more expensive cards, but our tests showed otherwise. We tested the CompactFlash cards using Canon's EOS 350D in RAW mode. Shooting

30 frames took 37 seconds with the Crucial card, while the SanDisk made the process seven seconds quicker.

In RAW mode, the EOS 350D can shoot four frames at around 2.4fps before it has to slow down and rely on the memory card. Amazingly, switch to even the highest-quality JPEG mode and the 350D can sometimes shoot until the card is full, depending on the complexity of the scene – both the Crucial and SanDisk happily coped with writing the data at this speed.

It was a different story with the SD cards. Using Nikon's D50 and the Crucial card, we were able to shoot 30 RAW shots in 42 seconds (the D50 showing itself to be slower than the Canon), but the SanDisk card took 45 seconds. In the best-quality JPEG mode, the difference was more pronounced, with the Crucial storing 30 frames in 18 seconds and the SanDisk taking 24 seconds.

Overall, it shows that it isn't always worth spending extra on a theoretically faster memory card for SLR use. Our recommendation is to opt for the cheaper Crucial cards and get a greater storage capacity.



Pentax *ist DL

PRICE: \$1199

SUPPLIER: www.i-tech.com.au

With a virtually identical design to Nikon's D50 (and likewise available in black or silver), the *ist DL is just as comfortable to use. It weighs a similar amount too; the body is lighter, but the four AA batteries add a considerable 80g.

As we discovered with the Fujifilm, AAs are both good and bad. Power is readily available, but no rechargeable batteries or charger are included, even at this price. If you're familiar with the *ist DS – the DL's bigger brother – you'll also be disappointed that the auto focus system only has a three-point selection (rather than 11) and the buffer size has been reduced to just five shots for JPEGs and three for RAW.

There's also the minimum ISO sensitivity of 200. It's a problem shared with the Nikon D50, but will only be an issue if you want a wide aperture at the same time as a slow shutter speed, or when the light is too bright. Another

'problem' shared with the D50 is the use of SD cards – a potential annoyance if you already own high-capacity CF cards.

Fortunately, the *ist DL earns back points for ease

of use for novices. Buttons are kept to a minimum, with all the commonly used functions – ISO, drive, flash and white balance – easily available with a push of the Fn button. It means you can't alter settings without using the LCD (an advantage of the D50's), but there's less to baffle new SLR users.

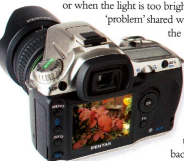
We're also fans of the big 2.5in LCD, and the menus are fairly intuitive. Another nice touch is the focus distance markings on the bundled lens – the only model here to sport them. A lens hood is included too.

Image quality was beyond rebuke the majority of the time, but that was only after we made a few tweaks to the default settings. The main problem is that the image tone option is set too high, making colours very oversaturated and leaving images with a touch too much contrast. Auto white balance wasn't too reliable either – colour casts were

noticeable unless you use the preset or manual controls.

Noise at up to ISO 800 was almost as unnoticeable as the Canon and Nikon, and exposures were fine most of the time. However, the matrix metering did tend towards over-exposure, particularly in low light.

Overall though, the *ist DL's quality lags slightly behind the Canon, which has those extra two megapixels, comes with a rechargeable battery and offers ISO 100 and a larger burst buffer for little extra cost. The Pentax is certainly a decent entry-level SLR, but the Canon is simply a better camera for your money.



LABS VERDICT

Easy to use and boasting a large 2.5in LCD, the Pentax isn't a bad choice. It can't quite match the Canon for features and image quality, though.

Quality of software ★★★★★

Features & Design ★★★★★

Value for money ★★★★★

OVERALL

★★★★★

FOCUS ON... compact vs SLR

Each type of camera has its pros and cons – here are the main ones

If you've never used a digital SLR camera, you'll probably be surprised to learn that they don't offer an LCD preview for framing shots. This is because there's a mirror in the way of the sensor, providing an optical view for TTL (through-the-lens) framing.

Digital SLRs have no video-recording function either, so if you were expecting better-quality movie clips, once again you might be disappointed. Plus, since the lenses are interchangeable, there's always the possibility of dust getting onto the sensor, leaving spots in every image. Lastly, SLRs are much bulkier and heavier than their compact cousins – you can't just slip one into your pocket just in case you see something worth shooting.

Fortunately, this small number of drawbacks is far outweighed by the advantages of a digital SLR. For a start, you quickly get used to using the viewfinder to frame shots, and because

it's optical, you can easily see whether your subject is in focus or not.

The ability to change lenses is also a major advantage. Although many cost significantly more than the camera body, there are plenty of affordable digital lenses around. From wide-angle to telephoto and fish-eye lenses, they all enable you to be creative with your shots. You can attach creative filters too, a feature many compacts lack.

Digital SLRs have larger sensors than compact cameras, which leads to lower noise at higher ISO settings. This is because the sensor gathers more light than a smaller one, so shots taken in lower light offer more detail, and the camera is quicker to auto-focus as well.

Then you have near-instantaneous startup. Some compacts are becoming incredibly quick, but they can't rival an SLR's minimal shutter lag. And where compacts have a shutter lag of up to 0.5 seconds, an SLR is virtually instant.

Battery life is another major plus. Since you're only using the LCD for reviewing images, most of the models on test will shoot anything up to 1,000 images before needing a recharge.

RAW mode is yet another advantage. Being able to store the raw information from the CCD, you bypass any in-camera image processing and can then alter the image to your liking with software.

Lastly, burst shooting is far superior to almost all compacts. Even the entry-level models here will shoot at between 2.5fps and 3fps at top quality, while compacts tend to average under 1fps and only buffer a couple of shots.

Of course, the SLR isn't a replacement for the compact digital camera – they complement each other. Most enthusiasts keep a compact handy for the odd macro shot (they can focus closer than standard SLR lenses), movies and social situations when an SLR is too bulky.



	Canon EOS 350D	Fujifilm FinePix 5950D Zoom	Konica Minolta Dynax 5D	Nikon D50	Olympus Digital E-300 Kit	Pentax *ist DL
OVERALL RATING	★★★★★	★★★★☆	★★★★☆	★★★★★	★★★★☆	★★★★☆
Price (inc GST)	\$1297	\$855	\$1177	\$1207	\$1089	\$1179
Price of delivery (inc GST)	\$25	\$8	\$25	25	\$16	\$15
Supplier's website	www.canon.com.au	www.fujifilm.com.au	www.konicaminolta.com.au	www.nikon.com	www.olympus.com.au	www.pentax.com
Manufacturer's website	www.canon.com.au	www.fujifilm.com.au	http://www.konicaminolta.com.au	www.nikon.com	www.olympus.com.au	www.pentax.com
Basic warranty	1yr RTB	1yr RTB	1yr RTB	1yr RTB	1yr RTB	1yr RTB
RESOLUTION						
Effective megapixels	8	9	6.1	6.1	8	6.1
Maximum picture resolution	3456 x 2304 (3:2)	3488 x 2616 (4:3)	3008 x 2000 (3:2)	3008 x 2000 (3:2)	3264 x 2448 (4:3)	3008 x 2008 (3:2)
Other resolutions	2496 x 1664; 1728 x 1152	2592 x 1944; 2048 x 1536; 1600 x 1200; 640 x 480	2256 x 1496; 1504 x 1000	2256 x 1496; 1504 x 1000	1280 x 960	2400 x 1600; 1536 x 1024
RAW mode	✓	✓	✓	✓	✓	✓
Sensor size	22.2 x 14.8mm	15.8mm (diagonally)	23.5 x 15.7mm	23.7 x 15.6mm	17.3 x 13mm	23.7 x 15.6mm
SHOOTING CONTROLS						
Shutter speeds (seconds)	30-1/4000, bulb	30-1/4000	30-1/4,000, bulb	30-1/4,000, bulb	30-1/4,000, bulb	30-1/4,000, bulb
Autofocus method	7-point selection, predictive	Multizone, centre-weighted, area	9-point selection, predictive, wide, spot	5-point selection, dynamic, area, closest subject priority	3-point selection	3-point selection, centre-weighted, spot
Focus assist lamp	Via built-in flash	✓	Via built-in flash	✓	Via built-in flash	Via built-in flash
Light-metering modes	35 segment evaluative, partial, centre-weighted	256 segment, centre-weighted average, spot, multi-point	Multizone, centre-weighted, spot	30 colour matrix II, centre-weighted, spot	Multizone, centre-weighted, spot	Multizone, centre-weighted, spot
Exposure compensation range	-2-+2EV, 1/2 or 1/3 steps	-2-+2EV, 1/3 steps	-2-+2EV, 1/3 steps	-5-+5EV, 1/2 or 1/3 steps	-5-+5EV, 1/2 or 1/3 steps	-3-+3EV, 1/2 or 1/3 steps
Flash compensation	-2-+2EV, 1/2 or 1/3 steps	-2/3-+2/3EV, 1/3 steps	-2-+2EV, 1/3 steps	-3-+3EV, 1/2 or 1/3 steps	-2-+2EV, 1/2 or 1/3 steps	-2-+2EV, 1/2 or 1/3 steps
Flash guide no.	13m	5.6m	12m	11m	Not stated	15.6m
ISO settings	100-1600	80-1600	100-3200	200-1600	100-400 (800-1600 boost only)	200-3200
White-balance presets	6	6	6, colour temperature selection	6	8, colour temperature selection	9
Program auto/shutter-priority/aperture-priority/full manual	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓	✓/✓/✓/✓
Depth-of-field preview	✓	✗	✓	✗	✓	✓
Mirror lock-up	✓	N/A	✓	✗	✗	✓
Time to ready	0.2 seconds	1.2 seconds	0.4 seconds	0.2 seconds	2 seconds	0.8 seconds
Continuous shooting	3fps	1.5fps	3fps	2.5fps	2.5fps	2.8fps
Self-timer	10 seconds	2 or 10 seconds	2 or 10 seconds	2-20 seconds	2 or 12 seconds	2 or 12 seconds
PLAYBACK CONTROLS						
Auto rotate portrait images	✓	✗	✗	✓	✓	✗
Maximum playback zoom	10x	Not stated	5x	Not stated	10x	10x
Image display	Image, histogram, detailed info, highlights	Image, histogram, detailed info, highlights	Image, histogram, detailed info, highlights, lowlights	Image, histogram, detailed info, highlights	Image, histogram, detailed info, highlights	Image, histogram, detailed info, highlights
PHYSICAL FEATURES						
Lens mount	Canon EF	Fixed lens	Minolta A mount	Nikon F mount	Four-Thirds mount	Pentax KAF2, KAF, KA mount
Memory technology	CompactFlash Type I and II	CompactFlash Type I and II; xD-Picture Card	CompactFlash Type I and II	Secure Digital	CompactFlash Type I and II	Secure Digital
Viewfinder coverage	95 percent	100 percent	95 percent	95 percent	94 percent	95 percent
LCD (in)	1.8	1.8	2.5	2	1.8	2.5
Hot shoe	✓	✓	✓	✓	✓	✓
Video output	PAL/NTSC	PAL/NTSC	PAL/NTSC	PAL/NTSC	PAL/NTSC	PAL/NTSC
Body construction	Plastic with metal subframe	Plastic with metal subframe	Plastic with metal subframe	Plastic with metal subframe	Plastic with metal subframe	Plastic with metal subframe
Weight with lens, memory card & batteries (g)	732	766	850	825	935	850
Dimensions including lens (WxHxD, mm)	127 x 141 x 95	135 x 147 x 89	100 x 146 x 94	133 x 152 x 102	144 x 145 x 84	130 x 148 x 93
KIT LENS						
Aperture range	1/3.5-22 (wide); 1/5.6-36 (tele)	1/2.8-8 (wide); 1/4.9-11 (tele)	1/3.5-22 (wide); 1/5.6-36 (tele)	1/3.5-22 (wide); 1/5.6-38 (tele)	1/3.5-22 (wide); 1/5.6-22 (tele)	1/3.5-22 (wide); 1/5.6-40 (tele)
Minimum focus distance	28cm	1cm (Super Macro)	38cm	28cm	38cm	25cm
Optical zoom (35mm equivalent)	18-55mm (29-88mm)	6.2-66.7mm (28-300mm)	10-35mm (27-105mm)	18-55mm (27-83mm)	14-45mm (28-90mm)	18-55mm (27-83mm)
Filter diameter	58mm	58mm	55mm	52mm	58mm	52mm
Focal length multiplier	1.6x	N/A	1.5x	1.5x	2x	1.5x
MISCELLANEOUS						
Battery type included	Li-ion 720mAh	4 x AA (Ni-MH recommended)	Li-ion, 1500mAh	Li-ion, 1400mAh	Li-ion, 1500mAh	4 x AA (Ni-MH recommended)
Charger/AC adapter included	Charger	✗	Charger	Charger	Charger	✗
Connection type	USB 2	USB 2	USB 1.1	USB 2	USB 1.1	USB 2
Software supplied	Canon Digital Photo Professional, ZoomBrowser EX 4.4, PhotoStitch 2, PhotoShall 3	FinePix Viewer, ImageMixer V02.1E, RAW File Converter LE	DWAGE Master Lite 1.1, Kodak EasyShare	Nikon PictureProject 1.5	Olympus Master	Pentax Photo Laboratory 2.1, Photo Browser 2.1
Accessories supplied	Composite video cable, USB cable, neck strap, viewfinder cap	Composite video/audio cable, USB cable, neck strap, viewfinder cap, lens hood	Composite video cable, USB cable, neck strap, viewfinder cap	Composite video cable, USB cable, neck strap, viewfinder cap	Composite video cable, USB cable, neck strap, viewfinder cap	Composite video cable, USB cable, neck strap, viewfinder cap, lens hood



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- New High Dynamic Range visual effects
- Dual DVI (Dual-Link) + HDTV + D-sub (by dongle) support



GE CUBE RADEON X1300 Series

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- Powered by ATI RADEON® X1300 (90nm) GPU
- New ultra-threaded core 3D architecture with ATI's revolutionary Avivo video and display technology
- CrossFire™ Ready (Software Mode) to deliver multi-GPU
- DVI + HDTV + D-sub support
- New High Dynamic Range visual effects
- Shader Model 3.0

*all specifications are subjected to change without notice.

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Gaming Heaven

This season has seen some of the greatest PC games ever launched. PC Authority shows you how to make the most of it with the latest peripherals.

PC users are a diverse lot. Some of us are slaves to the clock cycle, craving performance above all else. Some can't get enough of the latest printer ink, and others can't help slipping phrases like 'total cost of ownership' into everyday conversations. But if there's one thing we all have in common, it's games. At some point you would have felt the addictive lure of a classic title. You would have played it so much that your family and friends fall by the wayside. You stay up all night, only to collapse in bed while the

sun comes up, haunted by ghostly remnants of the game. Whether its streams of falling blocks in Tetris, or gathering your party for a raid in World of Warcraft, the inner gamer has always been well-catered for on the PC.

So this month, we've taken a different approach to our typical Labs roundups. A stellar game can be ruined by poor hardware, so the following pages are dedicated to the latest gaming gadgets and devices, from Logitech's Laser Mouse G5, to Saitek's appropriately-named Cyborg Evo Wireless. We've also pitted

the Sony's PSP against the Nintendo DS to show you which palm-sized powerhouse is more deserving of your thumbs.

Finally, we couldn't do a gaming roundup without looking at some of the standout games for the holidays.

CONTRIBUTORS: Stuart Andrews, David Bayon, David Fearon, Ben Hartwidge, David Kidd, Roger Kirkwood, Jim Martin, Clive Webster.

Gaming mice

Logitech Laser Mouse G5

PRICE: \$85 WEB: www.computeralliance.com.au

If money's no object, there's only one mouse to buy – Logitech's G5. The moment you feel how smoothly it glides, how comfortable and well put together it is, you won't want any other.

Build quality is remarkable – from the fabric-covered USB cable to the smooth PTFE (Polytetrafluoroethylene) feet, the G5 feels like it will last forever. The scroll wheel tilts horizontally like the Microsoft, and behind it are two buttons to change sensitivity independently of drivers.

Lights indicate the current setting: 400, 800 or 2000dpi. It's the most sensitive on test and could make the difference between hitting that terrorist or being fraggged. You can even adjust x- and y-axis sensitivity independently.

One of the G5's tricks is a removable weight cartridge, and a selection of 16 weights to fill it with. This allows you to set exactly the right weight and balance – it feels noticeably smoother than the lighter mice on test.

Aside from the solitary 'back' button on the left-hand side (which can be reprogrammed like the others), there aren't any more buttons – for gaming, there's no need.

Although it doesn't come with a case like the Razer, you'll be the envy of other gamers at LAN parties, especially if you pretend to adjust weights in the cartridge. The Razer is better value, but the G5 has won our hearts.



OVERALL



Microsoft Comfort Optical Mouse 3000

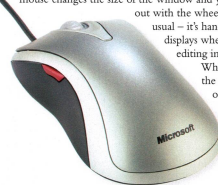
PRICE: \$32 WEB: www.newell.net.au

The Comfort 3000 is less than half the price of Logitech's G5, but it's obvious why – this mouse has far fewer features. Although it offers a decent resolution of 1000dpi – more than enough for most gamers – you can't adjust sensitivity on-the-fly. It doesn't use a laser pickup either.

However, the Optical Mouse 3000 does offer a horizontal and vertical tilt wheel, plus accelerated scrolling, so the faster you roll the quicker you shift through your weapons (or lines on a web page).

Another feature of this mouse is the ability to magnify a portion of your image with a press of the red button on the side. Moving the mouse changes the size of the window and you can zoom in and out with the wheel. You can still type as usual – it's handy on high-resolution displays when text is small, or when editing images.

While build quality is solid, the 3000 is too light for our liking and also a touch narrow to be comfortable. It may be the cheapest here, but you'll need to spend more for the ultimate gaming mouse.



OVERALL



Razer Diamondback Chameleon

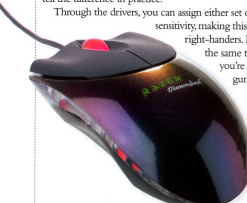
PRICE: \$79 WEB: www.doicocaustralia.com

As the official mouse of the World Cyber Games, there's a lot going for the Diamondback Chameleon. The only difference from other Diamondback models is the TVR-style flip paint, which changes from green to purple as you tilt it.

Aside from aesthetics, the Razer is well designed. It's a bit light, but it's comfortable to use – the huge main buttons are good for even the biggest hands. Rubber stage grips ensure no slipping in tense moments, and the 1600dpi optical sensor offers precise control for when aiming needs to be pixel perfect. It isn't as sensitive as the Logitech, but you'll be hard pushed to tell the difference in practice.

Through the drivers, you can assign either set of side buttons to alter sensitivity, making this a mouse for both left- and right-handers. It's too easy to push both at the same time, though, especially when you're in the middle of a frantic gunfight.

We like the Teflon feet, which glide as well as the Logitech, and the fact that the sensor never turns off, providing immediate response. Add the bundled zip-up case, and the Razer is a great gaming mouse.



OVERALL



Saitek PM-12A Gaming Mouse

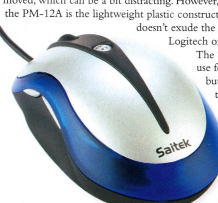
PRICE: \$65 WEB: www.gpstore.co.nz

Sensibly priced, the 1600dpi PM-12A is a step up from the Microsoft. Again, there's no laser, but precision definitely isn't lacking, especially as, even without drivers installed, you can switch between 1,600dpi and 800dpi using the top-mounted button.

One drawback here is that it isn't possible to switch resolutions without taking your fingers off the main mouse buttons. Two buttons on the left and one on the right are fully programmable in the driver, and the design (like the Microsoft) means you don't need to be right-handed to use it.

The glowing blue light at the rear flashes every time the mouse is moved, which can be a bit distracting. However, our main gripe with the PM-12A is the lightweight plastic construction, which simply doesn't exude the same quality as the Logitech or the Razer.

The Saitek is comfortable to use for long periods of time, but the Logitech remains the king of comfort, even if it's only for right-handers. If you can't pay the extra for the Razer, the Saitek won't disappoint, but the former is well worth that small premium.



OVERALL



Steering wheels

Logitech MOMO Racing

PRICE: \$140 WEB: www.e-shop.com.au

Logitech's MOMO Racing is the most desirable wheel on test.

The design and construction are top notch – this wheel looks and feels fantastic. It's also the only one with a dedicated gear stick as well as up/down paddles. On the downside, it's rather complicated to set up and the instructions could be much better.

It's not particularly clear, for example, that you lift the top plastic cover off to access two hidden clamp shafts, adding to the more obvious third clamp underneath.

Still, we loved the ability to change the sequential shifter from the right side to the left, to match the in-game dashboard of your favourite car. Just note that it's set quite far

back, which feels a little strange at first, but you quickly get used to it.

The steering weight is heavy enough to give good force feedback, with jumps and understeer lightening the wheel. While some effects were strongly felt (such as crashes), others were too soft (such as rumble strips) and overall it sits behind the Saitek for realism. And unfortunately, ours had problems in GTR, where the pull into the corners was too strong, making the steering sluggish and unresponsive.



Overall, it's a solid performer, and it's well built. But in-game action is what counts, and the Saitek's force feedback has the edge.

OVERALL



Saitek R440 Force Feedback Wheel

PRICE: \$113 WEB: www.techbuy.com.au

Saitek's R440 is different to the other wheels. Where most models are imitations of the real thing, the R440 looks like a steering device from 2050. But don't judge a book by its cover, as this one performs superbly.

The two-piece clamping system holds the wheel to your desk firmly, and on the floor another two-piece setup holds your kit firmly on the carpet. This is helped by a pedal design that pivots from above, which prevents the pedal box from creeping away with your feet upon it.

Once you've left the starting grid, force feedback is the best here. In ToCA Race Driver 2 and GTR, we felt every blip of the rumble strips, and performance in Colin

McRae Rally 2 was suitably impressive.

Even surface changes from mud to gravel were transmitted clearly, and we loved the way the steering lightened over mid-corner crests. It left us in a sweat at the end of a gruelling stage and performance was consistent from game to game.

The only criticism is that the grip position is too low, but the superb force feedback overrides this. It's futuristic styling



may not be pretty, but this is still the best wheel here.

OVERALL



Thrustmaster Ferrari GT 2-in-1 Force Feedback

PRICE: \$93 WEB: www.newell.net.au

As you would expect from a Ferrari branded product, this is a great-looking wheel. And fortunately, its good looks translate into decent performance too. In the steering department, everything worked well, and it was easy to control all the cars we drove. Force feedback was accurate and, like the Saitek, it felt consistent across all our games.

There's quite a bit of noise from the wheel, though. The gear paddles' sharp click cut through our earphones, and the wheel tended to rattle and clonk with strong force-feedback effects such as crashes.

While this is a minor gripe, the pedals were harder to live with. Most of the acceleration

came in the last quarter of throttle movement, making cars seem sluggish, and it took a while to learn the fine balance required in a mid-corner slide. We also had trouble keeping the pedal box in place, as it didn't grip the carpet well.

Mind you, unlike the others, it's compatible with the PlayStation 2 as well as PCs. With separate plugs for each environment, this is a



convenient wheel for anyone who wants to share one between devices.

OVERALL



Joysticks

Logitech Force 3D Pro

PRICE: \$55 WEB: www.dolcoaustralia.com

It may not have the style of the Saitek or the wow factor of the Thrustmaster, but this model from Logitech is a good joystick. It has six of its 12 buttons located on the base with a throttle lever behind the stick. Although not suited for left-handers, this works well for a right-hander and addition of a wrist-rest for added support is a welcome inclusion. However, we did find the throttle can accidentally catch on a sleeve, a situation you most likely will want to avoid during the heat of battle.

The force feedback is excellent and really adds to the gaming experience, helped by the well-positioned fire buttons. The standard trigger and thumb buttons are joined by four

additional buttons, as well as the obligatory directional 'hat' control. But despite the joystick's solid build and its responsiveness to small movements, it lacks the level of excitement that the best models exude by the bucketload.

Still, it's worth spending more here than on budget joysticks because this is a good all-rounder, but it's still not the ultimate gamer's joystick when compared to the Saitek. The latter is a step ahead, slightly cheaper and cordless, while the Logitech needs a USB connection. But if force feedback is your essential need rather than wireless, this is the best budget stick available.

OVERALL



Saitek Cyborg Evo Wireless

PRICE: \$86 WEB: www.techbuy.com.au



Every gamer is familiar with the knot of wires that develops within minutes of picking up a controller, so the Cyborg Evo Wireless is a great step forward. It communicates with the PC via a tiny wireless USB dongle and performs as responsively as a standard wired model. Battery life, which is usually the bane of wireless controller's lives, is good too – on a single AA battery, Saitek claims 75 hours use and a year on standby.

It's a dream to use, picking up the slightest twitch of the wrist, and the buttons are easily accessible. The throttle is controlled by a lever on the base that works effectively. The only downside is the lack of force feedback, but

Saitek's range also includes the Evo Force model, which for a slightly higher price offers the force feedback feature instead of the wireless capability.

The stick itself is fully customisable – you can switch to a left-handed setup by removing three thumbscrews, as well as raising and lowering the wrist support and adjusting the angle of the top buttons. The handle is also twistable for a further control.

Overall, the Thrustmaster is the Top Gun of these joysticks, but unless you're a flight fanatic you'll be happier with the better value Saitek, thanks to its cordless connectivity.

OVERALL



Thrustmaster Top Gun Afterburner Force Feedback

PRICE: \$74 WEB: www.e-shop.com.au

You have to really love your flight sims to justify spending \$74 on a joystick, but this *Top Gun* branded monster brought out the Maverick in the entire PC Authority team. Fans of the classic 1980s blockbuster can now get the most out of their games thanks to the brilliant two-handed stick/throttle combination.

It's amazing how much more immersive games feel when they're played using the proper equipment – the throttle swings forward to apply afterburners for the sudden burst of speed all fighter pilots adore. The stick itself is responsive and the force feedback is fantastic – even the configuration utility offers plenty of turbulent amusement.

Still, it's far from being the perfect controller. We'd like a few more buttons for a start, as it feels a little inadequate for some of the more complex games. Plus, it requires its own power supply despite connecting over USB, a design flaw that is more than a little bit irritating.

But these are relatively minor points that don't detract from the overall effect. Like the film itself, it's brash, over-the-top and a whole lot of fun. Get yourself a headset and change your online handle to Maverick.

OVERALL



Handheld consoles

Nintendo DS

PRICE: \$175 **WEB:** www.devoteddvd.com.au

Badly informed cynics often dismiss the DS for being gimmicky, ugly and underpowered, but they're completely missing the point of Nintendo's fantastic clamshell gadget.

Far from being a gimmick, the console's dual-screen feature turns handheld console gaming on its head and spins it around. The main reason for this is the touchscreen, which allows immediate, mouse-style controls without having to muck about with the control pad. This makes it possible to play first-person shooters, such as the bundled *Metroid Prime: Hunters*, in the same way as you would with a PC; watching the action on the top screen, while using the touchscreen and thumbpad (which is on the end of the carrying strap) to control your direction, and the D-pad and buttons to control your movement and gunfire. It's also great for selecting and commanding your units in strategy games such as the insanely addictive *Advance Wars: Dual Strike*.

You can even play against your mates with the wireless link-up and, as this is 802.11-compatible, you can connect it to a wireless network and

compete against people all over the world now that Nintendo have launched their online gaming service.

The DS can't compete with the PSP in terms of 3D power, but it makes up for that with fun and innovation. For example, *Nintendogs* breathes new life into the 'tamagotchi'-style game, where you can use the touchscreen and microphone to interact with a virtual dog. Meanwhile, *WarioWare: Touched* contains hundreds of ingenious touchscreen and microphone-based mini-games (you actually have to blow into the microphone in some of them), even if they do make you feel a bit self-conscious on the train.

Best of all, you don't have to be a serious gamer to enjoy the DS. Practically anyone can enjoy swatting flies in *WarioWare* without years

of experience playing *Counter-Strike* and talking in L33t speak. Plus, you can play any of the hundreds of Game Boy Advance titles on it. Okay, so it's not as good-looking as the PSP and it won't play MP3s or movies either, but the DS only costs \$175, and that buys you a wealth of fun and innovation.

OVERALL



Sony PlayStation Portable

PRICE: \$349 **WEB:** www.bargain.net.au

Since we first looked at the PSP, it's become a global phenomenon. And no-one – even the most ardent Nintendo supporter – can deny that the PSP's instant rise to legendary status is richly deserved. The screen is incredible and the games gobsmackingly good, not just for a handheld but in their own right – titles like *Wipeout Pure* are being hailed as genuine evolutions of major franchises rather than cut-down copies. And then there's the design: the thing itself is simply an object of 21st-century gloss-black consumer beauty.

Crammed into the case is an amazing 4.3in widescreen, as well as a Memory Stick Duo slot; integrated 802.11b wireless adaptor; UMD (universal media disc) drive taking proprietary 1.8GB MiniDisc-like optical discs; a full range of controls including lovely clear-perspex index-finger buttons; and an analog thumb controller. The guts of the machine include a 333MHz processor and 32MB of RAM.

If you don't want one as soon as you've seen it, getting a PSP in your hands and switching it on will convince you. The screen is superbly bright and vibrant, and has an extra-bright setting when it's running from the mains.

Screen lag and smearing is almost non-existent. Every game we've tried – *Ridge Racer* is our favourite – has blown us away. 3D graphics equal

the arcade machines of a few years ago, and the capacity of UMD media means games can be as extensive, with as many levels as a PC or full-sized console game.

And did we mention that it's a fully-capable portable media device that can play MP3s, show JPEG photos and play videos at a quality level that makes Apple's video iPod look ridiculous? And that it comes with headphones that include a remote control? Oh, and a replaceable lithium ion battery, which means, unlike an iPod, you can carry a spare?

On top of that, there are now third-party applications to plug the hole left by the conspicuous absence of any bundled software for transcoding video and uploading it from a PC. Companies such as X-OOM with *Movies on DVD* (there's a trial version on this month's cover disc) and Xploder with *PSP Media Player* (which handily includes a USB adaptor, allowing you to recharge your PSP via a USB port) have made it far easier to transfer video for watching on that fabulous screen.

The flexibility doesn't end there. You can

browse the

Web using the wireless adaptor (although you may need to update the firmware), and UMD movies are taking off in a big way in the US, with some UMD film releases outselling the DVD versions. UMD movies have yet to establish themselves here, but that looks set to change. Already you'll find a small selection of action titles such as *I, Robot*, *Pirates of the Caribbean* and, bizarrely, *Ghostbusters*.

Clearly, we don't need to tell you to buy one of these. But we're going to tell you anyway. If you can get hold of one in the post-Christmas clamour, then get hold of one you should. The PSP is awesome.

OVERALL



Games

World of Warcraft

PRICE: \$69 WEB: www.newell.net.au



This year's gaming phenomenon: an online fantasy RPG boasting over four million players worldwide. Join them, and it won't take long to see why.

Blizzard took the realms and creatures it had developed in three best-selling Warcraft strategy titles, and created Azeroth: a living, breathing world of adventure fit for months of exploration. Where other online RPGs proved too demanding for mainstream gamers, World of Warcraft (WoW) sucked them in with simple, enjoyable quests.

If you just want to explore the deep forests and thriving cities on your own, taking quests where you find them, you can. If you want to join guilds and socialise, vanquishing monstrous hordes en masse, that's fine too. Whether you join the squeaky-clean Alliance, or the Horde, you can have a hand in Azeroth's fate. Just remember it's subscription based and costs US\$14.99 a month.



OVERALL ★★★★★★

GTR FIA GT Racing

PRICE: \$80 WEB: www.gamesmarket.com.au

The consoles have seen the best racing action in recent years, with no serious PC competitor to Sony's mighty Gran Turismo in sight. Then along comes GTR FIA GT Racing to show that the PC can go places where consoles fear to tread.

It might not have Gran Turismo's visual glamour or an enormous roster of upgradable cars, but GTR FIA GT Racing delivers a sense of realism that no other driving game can match. Played with a steering wheel such as the Saitek R440 Force Feedback Wheel, it's easily the most exciting and realistic driving game on any system, and unlike the Gran Turismo series, it boasts computer competitors that actually seem hungry to win.

Once you leave the novice driving aids behind, it takes serious skill and a will of steel to win – the usual boy-racer techniques will just send you spinning off the track. This makes GTR a tough game to get into, but one that's seriously deep and satisfying when you do.

Also, if modern supercars aren't your thing, the boys behind GTR have just launched GT Legends. It applies the same winning formula with an old school feel.



OVERALL ★★★★★★

Battlefield 2

PRICE: \$76 WEB: www.newell.net.au

Further proof that the PC remains the king of online gaming, Battlefield 2 took the online military first-person shooter and ramped up the scale to epic proportions.

Set in a fictional conflict between Western forces and Chinese or Middle-Eastern opponents, the game takes up to 64 participants in its simulated battles, with players opting for a number of offensive, defensive or support roles. Clever squad-command features promote teamwork, while the game's vast maps encourage the use of vehicles, including tanks, jeeps, planes and helicopters.

It doesn't always work – it takes a certain discipline to make the most of the game – but when it does it's a perfect marriage of strategy and action. And, thanks to a stunning graphics engine, it's a stirring, cinematic combat experience too. At the very least, download the demo and try it out.



OVERALL ★★★★★★

Black & White 2

PRICE: \$69 WEB: www.newell.net.au

For all its achievements – the graphics, the wonderful interface, the sheer joy of raising your own disco-dancing, dung-chucking, people-munching creature – the original Black & White still divided opinion. Some praised its original approach

as a welcome change to the conventional God games, but some found the core, people-pleasing gameplay a faintly tiresome affair. Perhaps that's why Lionhead took a different approach for the sequel, binding the creature training and miracle working of the original into a more conventional city-building, army-raising RTS, with your nascent deity battling others for domination.

The means are up to you – do you convert the non-believers with your magnificent public works or just have your creature stomp them into mud? Just remember: your actions change the very nature of your world. Maybe Black & White 2 feels slightly basic as an RTS, but the game wins through on sheer storming spectacle. With its lush vibrant worlds, huge forces and the fabulous sight of your creature literally kicking the enemy out of town, this is one religious epic not to be missed.



OVERALL ★★★★★★

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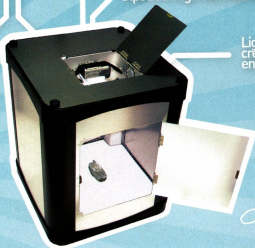
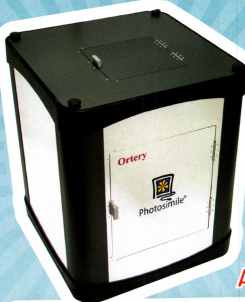
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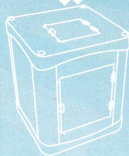
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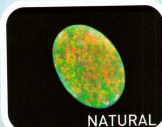
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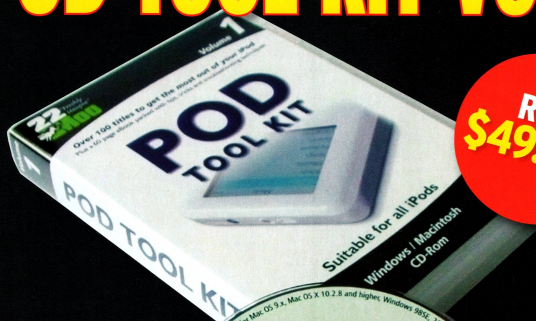


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Questions & Answers

David Moss tackles some drag-and-drop issues and helps you tame the handy beast known as DelProf.

DOWN MEMORY LANE

Q Could you please explain what dual-channel memory means and whether it's worth using?

I Macmillan

A A full answer would take up most of the magazine, so here's a cutdown version. A few years back, motherboard engineers realised a bottleneck had developed between the memory controller and the central processor – single-channel memory controllers simply couldn't keep up with a modern front side bus (FSB). At the time, the FSB handled all communication between CPU and memory (as well as hard disks, expansion slots and so on), so it was clear something needed to be done to alleviate the load on it, and one solution was to make the memory controller twin channel – effectively doubling its bandwidth.

Naturally, AMD and Intel have done things differently: the Athlon XP uses two hardware channels with a dedicated chip to divvy up the load between the two channels, while Intel's approach widens the existing channel. Before you rush out and get a dual-channel motherboard, bear in mind that for typical word processing and spreadsheet tasks you won't see as much benefit from a dual-channel capable motherboard populated with dual-channel chips as you will if you're running graphics-heavy applications,

including imaging, CAD, large spreadsheets and, of course, games. If you're doing work that greatly affects the processor, you need dual-channel memory.

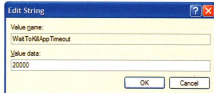
By its very nature, dual-channel implies that memory chips must be added in matched pairs: if you pop ordinary memory chips into dual-channel slots, you'll either hang the system or it will switch back to single-channel mode.

WHAT A DRAG

Q Having just installed a second hard disk, when I drag and drop files between hard disks it doesn't remove them from one to the other, it just makes a copy of itself. Any help on how I can drag and drop and move files between different disks rather than just copy them?

MINDsplit

A What you're seeing is just the way drag and drop works under Windows: if you dragged files between folders on the same disk then the action would be to move them, but when you drag between different disks the action becomes to copy. To get round it, drag with the right mouse button instead of the left – a pop-up menu will appear asking you if you want to copy or move the files. This is also the way to copy, rather than move, files between folders on the same disk.



KEEP ON RUNNING

Q When systems on the network are told to shut down, we get error messages informing us that such and such a process is still running and then we're asked if we wish to end it now or cancel and wait. Is there a way to avoid this, as it seems to be getting worse rather than better?

D Hart

A There's a Registry setting you can change that increases the 20-second default timeout period allotted to each running process at shutdown, and you'll find it at the key: HKEY_CURRENT_USER\Control Panel\Desktop\WaitToKillAppTimeout

The value is set in milliseconds, and a change to 30 seconds should suffice. If you still get the same errors, start to get interested in what's stopping that process from ending.

I've seen occasions where systems simply don't respond to shutdown or restart requests, the system I'm using at the moment being a case in point.

DAVID'S TIP 1: DelProf

The User Profile Deletion Utility Tool (DelProf) is a handy beast that lets you cut down on the build-up of user profiles on networked systems. If you use roaming user profiles on your network, you'll know that over time the client workstations get heavily loaded with the locally cached profiles of those users who don't have a specific computer but simply take whichever is available. This can have a significant impact on system disk space, especially noticeable if your machines don't have the giant hard disks that are so common today. DelProf ships as part of the Windows Server 2003 Resource Kit, but can also be downloaded separately from www.microsoft.com/downloads/details.aspx?FamilyID=901a9b95-6063-4462-8150-360394e98e&displaylang=en

It's a command-line tool that utilises a series of switches to work its magic on both local and remote systems. To be able to use it, you need to be logged on as the administrator or as a member of the administrators group. DelProf uses the

following switches, which I'll explain below: delprof [/q] [/i] [/p] [/r] [/c:\computername] [/ddays] [/?]

- /q - this switch makes DelProf run in quiet mode, which means you'll receive no prompts asking if you're sure you want to delete a profile. Handy in batch files.

- /i - the ignore switch, which tells DelProf to ignore errors and carry on deleting. Not entirely sure when you'd want to use that. I'd quite like to know about errors when using this sort of utility.

- /p - the prompt switch, which asks you to confirm you really meant to delete the profile, which is about to be assigned to the great bit-bucket in the sky.

- /r - the roaming switch and the one I use the most. It tells DelProf to only delete cached roaming user profiles and to leave local profiles alone.

- /c:\computername - lets you specify the name of the remote computer on which DelProf is to run.

- /ddays - this is a handy switch that lets

you tell DelProf to delete profiles that have been inactive longer than the number of days you specify.

- /? - the help switch that displays the command-line syntax.

Here's an example of how to use DelProf to delete the user profiles on a remote system, but to be prompted to confirm each deletion: delprof /p /c:\computername

After hitting Enter, you'll see a message similar to this:

```
Delete \\COMPUTERNAME\DS\Documents
and Settings\username? (Yes/No/All)
Hit <Y> to delete the profile username.
```

You'll then be prompted to delete each user in turn, unless of course you went for the 'All' option.

Be aware that this tool does exactly what it says it's going to do: if you delete a profile then you'll be removing everything in that profile on that system, and that includes major items like documents as well as minor items such as user settings and background images. A backup could be your friend here.

It doesn't hang but just carries on as normal, and won't do as it's told unless I hit <Ctrl-Alt-Del>, then hold down Ctrl and click on Shut down again. If that fails, I have to hit the reset or power switch.

ANOTHER DRAG

Q I know you can use drag and drop, or cut and paste, to move text in a Microsoft Word 2003 document, but I have limited mobility and was wondering whether there's another way, perhaps by creating macros to do this task? I can use Sticky Keys, but find them very time consuming when I'm in a hurry.

R Patel

A You can use Function Keys to do the work for you; for example, place the insertion point at the beginning of the text you wish to move, then press F8 and you'll see that each subsequent press (after the first, which appears to do nothing) selects first one word, then the remainder of the sentence, then the next sentence or paragraph and finally the whole document. The purpose of the F8 key is to extend a selection, but you might find that it's taking in too much at each bite to suit your purposes. One way round that is to first press F8, then to extend the selection using the Arrow keys. Once you've made your selection, press F2, the Move Text Function Key – if you now move the insertion point to where you wish to place

the text and press Enter, the selected text will be moved to that location.

Word uses all the Function Keys to access features:

- F1 accesses Help, in common with all Windows applications.

- F2 as I've mentioned is Move-Text, but I should point out it can move graphics too.

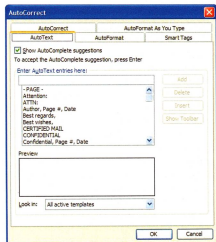
- F3 inserts AutoText into a document. AutoText is a store for regularly used items of text and/or graphics, which lets you assign each stored item a name. To use AutoText, select the text and/or graphic and then click Insert | AutoText | New (or use the <Alt-F3> key combination to do the same thing) – you'll be prompted to give your new AutoText entry a name.

If that name is more than four characters long, Word will show you the AutoText entry after you've typed four characters, and you just have to hit Enter to insert it. If you used a name with less than four characters, type a couple of those letters, press F3 and your AutoText will be instantly inserted. (This also works with AutoText names longer than four characters; although you won't get the suggestion prompt, the text will be inserted straight away.) Quite a few AutoText entries are already provided in Word 2003, and to view them click Insert | AutoText, when the AutoCorrect dialog will appear with the AutoText tab selected.

If you use a lot of AutoText entries, I can heartily recommend the AutoText toolbar:

move your pointer into the blank area to the right of the Help menu, right-click and choose AutoText from the toolbar list you'll see. While you're there, you might also select the Customise... item (bottom of the list) and make sure you have the Standard and Formatting toolbars set to display on two rows. If you've never done this, you'll be amazed at how much new functionality is suddenly available on the two toolbars that now appear above your document.

▼ Checking on AutoText entries via the AutoText tab on the AutoCorrect dialog.



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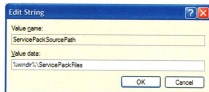
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▲ **Modify the Value to stop SFC prompting you to insert a CD you don't possess.**

- F4 repeats the last thing you did.
- F5 opens the Find and Replace dialog with the Go To tab selected.
- F6 moves you to the next pane or frame in your document.
- F7 invokes the Spellchecker.
- F8 extends a selection.
- F9 updates selected fields in a document.
- F10 puts the focus on the Word Menu Bar, instantly highlighting the File menu.
- F11 moves you to the next field in a document.
- F12 brings up the Save As dialog.

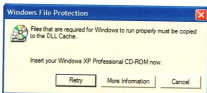
IN THE WARS

Q I'm having problems in World of Warcraft with characters not displaying properly, my model not appearing in the character window, blank entries in the status bar and more. I tried changing my graphics card, but it didn't work; in fact, the situation seemed to get worse. My system is as follows: AMD Athlon 64 3200+, 1GB of RAM (Corsair matched pair of 512s), NVIDIA GeForce FX 5950 Ultra graphics card, NVIDIA nForce 3 network controller, 120GB Western Digital SATA drive. Any suggestions you have as to how to fix this would be most warmly received.

A Although you've been seeing graphics problems, the fault actually lies with your network controller and not with your graphics card. To cure it, turn off a feature in the network controller by following these steps: head for Start, select Control Panel and then open the Network Connections dialog.

Click on the Configure button next to the controller name at the top of the dialog. Once the Properties dialog is open, click on the Advanced tab, look in the Property list and see if you have an entry labelled 'Checksum Offload'. If you do, and it's currently enabled, change it to Disabled using the Value drop-down combo box and then click OK to close the dialog.

▼ **Using the SFC with the /scannow switch can produce annoying dialog that doesn't make it clear which CD needs inserting.**



CHECKER MATE

Q I want to run a scan using the Windows System File Checker (SFC) on my computer, but when I try and kick it off I'm prompted to insert the Windows XP Professional SP 2 CD. I've tried using my original installation CD, but it doesn't like that and I don't have an SP 2 CD because I downloaded it in the first place. How do I get the SFC to work now? **T Lerner**

A I suspect you'll be less than thrilled to learn that even if you did have an XP Professional SP 2 CD, you still wouldn't be able to run the SFC with the /scannow switch, because that isn't what it wants either, even if the text in the error dialog indicates so. In fact, what the program wants is an XP Professional CD that already has the SP 2 files integrated. If you have one of those, you're laughing – if not, you have a couple of ways to try and resolve the situation. The first is to wade through the Microsoft Knowledge Base article entitled 'How to integrate software updates into your Windows installation source files', which you'll find at <http://support.microsoft.com/?scid=828930>.

The second is to change the Registry to point to the SP 2 setup files. To do that, back up

all data and anything else you like to do before modifying the Registry; then head for Start | Run, type regedit and hit Enter. Hunt for the following Registry key:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Setup
Look in the right-hand pane of the Registry editor and locate the 'ServicePackSourcePath' entry. Right-click on that, select Modify from the pop-up menu and then change the Value data entry to read: %windir%\ServicePackFiles

LOOPY LOGON

Q When I try to log on to Windows, I get prompted for my dialling code. This is on our network at work, which is a LAN, so there's no dial-up interface involved. Do I have a virus? **K Weir**

A You'll be pleased to know that you don't have a virus. After using <Ctrl-Alt-Del> to bring up the 'Log On to Windows' dialog, look carefully and you'll see that under the 'Log on to' combo box is a checkbox labelled 'Log on using dial-up connection'. I suspect you'll find that you've inadvertently enabled this entry, and disabling it will let you log on as normal.

DAVID'S TIP 2: Word styles

Here's a tip that only works on occasion, so I pass it on as not wholly reliable but still extremely useful. I often find in Microsoft Word 2003 that when I paste text from another document, the style in my current document gets overwritten with the style from the other document, which is irritating. One cast-iron way of getting round this is to paste the text into a blank Notepad document, then select the text again in Notepad using <Ctrl-A> and copy it from Notepad into the Word document.

Since Notepad isn't into rich text of any nature, this strips all the formatting code from the pasted material, leaving you with plain text. If you paste plain text into a Word document, it takes on the style assigned by that document. Good stuff. (This is also the way to copy and paste text from a web page into a Word document without bringing all the HTML code with it.) There are occasions, however, when you might not want Notepad to be part of the equation, as it strips all formatting from any text that's pasted into it, leaving you with an irritating reformatting task on your hands.

Let's get back to the original problem of copying and pasting between two Word documents without the former document's style overwriting the style of the second Word document. I was reading a Microsoft Knowledge Base article whose title led me

to believe that it would provide a solution to my problem. Article 898616 has the snappy title of 'If you paste text from one Word 2003 document into a second Word 2003 document, the Normal style of the first Word 2003 document overwrites the Normal style of the second Word 2003 document'. Brilliant, I thought, until I read the article, which goes on to say that the cause of the problem is using a Microsoft Visual Basic for Applications (VBA) macro to query or to copy the XML properties of a Word 2003 document. When you use a VBA macro to query or to copy XML properties, Word 2003 sets a flag to paste text and styles into the destination document. If the Normal style of the source document is different from the Normal style of the destination document, the Normal style of source document overwrites the Normal style of the destination document. Not helpful.

However, the suggested workaround was to undo the paste operation and then paste the text in again, which apparently resets the Word 2003 flag in question, and I can tell you that I've found this method does also work on some occasions – although not on all – when manually copying and pasting text between Word documents. As it can save a great deal of reformatting, I offer it up as a sometimes useful tip and hope it works for you.

Passwords for pros

Worried about your PC's security but overwhelmed at having to remember another password? Here are some tips for proper password management.

1 Be Wi-Fi aware

Wireless networks have become the new playground for hackers looking to exploit your weakest link. If your router supports it, enable the Wireless Encryption Protocol (WEP) to protect your transmissions. Better still, use Wi-Fi Protected Access (WPA), as it's much harder to break than WEP. Hiding the Service Set Identifier (SSID) is often touted as a Wi-Fi security 'must do', but this only prevents your network from being visible to those not looking for it. The determined hacker can still find it, because the SSID broadcasts without encryption to any host that requests it.



▲ If you want to protect your wireless connection then the Belkin Wireless Pre-N offers WPA as well as 64- and 128-bit WEP.

2 Open source encryption

Now that updated free versions of Pretty Good Privacy (PGP) have become all but extinct, your options are limited if you want non-commercial yet secure encryption of files and folders. Thank goodness, then, for AxCrypt (<http://axcrypt.sourceforge.net>). This handy piece of software integrates with Windows Explorer and uses AES encryption with 128-bit keys and industry-standard algorithms.

3 Steganography

Literally the 'art of secret writing', steganography hides data inside other data. So whereas cryptography lets the would-be hacker see the file but puts up security fences around it, with steganography the hacker doesn't even know a file holds valuable data. DriveCrypt, from www.

drivecrypt.com, can hide entire volumes of text inside music files, and also encrypts your hard disk and operating system using on-the-fly 256-bit AES encryption.

4 Secure password strategy

You've probably heard it so many times that it no longer registers, but a secure password strategy remains one of the most important privacy essentials; it is the most common way that security is breached. The main reason people still use their name as a password is because it's often tricky to create strong passwords that you can remember without writing them down. Use phrases such as 'my first pet was a black cat called Molly', forming the password from the initial letters: mfpwabccM. Make them stronger by top and tailing with non alpha-

numeric characters and you have something you can remember but is hard to crack, such as !mfpwabccM\$.

5 Set a BIOS password

Interrupt the BIOS booting by pressing the key when prompted so you can enter the BIOS menu (see left). From here, you can set a password that will be required every time you switch on the PC, before it boots into Windows.

6 Automated password management

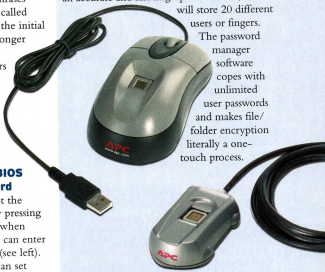
The temptation to write passwords down on a Post It note or a sheet of paper underneath your keyboard increases with the number of passwords you need to access all those different applications and websites. You're constantly advised not to use the same password for more than one thing, but that means you need an incredible memory to keep track of them all. However, with AI RoboForm Pro (www.roboform.com) you only have one password to remember, the one that lets you access it in the first place. Whenever you complete an online login, RoboForm saves the details and fills them in automatically when you next visit that site. All data is 3DES-encrypted on your PC, it works with Internet Explorer and Firefox, and a secure password generator comes as part of the package. Perfect for those with a poor memory.

7 Biometric password management

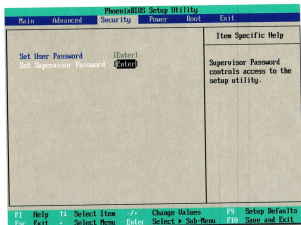
APC (www.apc.com/au) is best known for its industrial-strength, uninterruptible power supplies, but the company has also entered the fingerprint-scanning market with the Biopod and biometric mouse. While the matchbox-sized Biopod is ideal for notebook use, the mouse is definitely desktop bound (and unfortunately wired too). Both these USB devices feature an accurate and fast fingerprint scanner, and

will store 20 different users or fingers.

The password manager software copes with unlimited user passwords and makes file/folder encryption literally a one-touch process.



▲ APC's biometric devices feature a fast and accurate fingerprint scanner.



▲ Simple security can reap big rewards and a BIOS password could save your data if your PC is stolen.

Jargon buster: Web 2.0

Are you ready for the new Web? PC Authority gives you the rundown on Web 2.0 jargon.

Advertising

Web advertising has seen a dramatic shift in recent years. Where advertising was previously contract-based through large services like DoubleClick, new ad serving platforms from Google and Yahoo! allow many sites (especially smaller ones) to benefit from unobtrusive and relevant advertising, based on the site's content.

AJAX

A collection of technologies based on XHTML, JavaScript and Document Object Model (DOM) that allows users to manipulate the data on a website, without waiting for the instruction to go from the browser, to the server, and back again. This allows for more flexible user interfaces than typical HTML allows for. For an example of AJAX in action, check out Google's personalised home page at www.google.com.au/ig.

Google

A continually pioneering company in the Web 2.0 space. True to the philosophy of Web 2.0, Google adds, revises and develops technologies around existing content. Google started as



▲ Google News is a stunning service, made even more attractive through personalisation.

a search-only service, using an innovative PageRank system that not only searches based on content, but how each page links to other pages. Recently, Google has branched out into other fields like mapping and email.

Perpetual beta

A theme for many Web services is the idea that software is ever evolving to meet the real-time demands of Web users. Rather than releasing scheduled software updates, Web services like Google will add features as they become available and adapt dynamically to its users' requirements, which are in turn de facto 'testers'.

Podcasting

Similar to text syndication, podcasting allows users to subscribe to audio-based content. While many podcasts are amateur productions, recent media publishers have started producing podcasts as alternatives, replacements or supplements to traditional radio broadcasts.

Mashup

This concept originated from mixing different songs together, but can broadly apply to many Web services being mixed together to produce a new product. For example, a website could bring in feeds from Amazon, Google and news outlets to provide a daily, automated 'what's hot online' site.

RSS

An open XML-based format that lets websites provide a summary of content, like recent news updates, for users to subscribe to. Subscribers will then use an RSS aggregator (see PC Authority, October 2005, page 72) to receive the feed. Alternatively, browsers like Firefox support RSS feeds (called Live Bookmarks) directly.

Slashdot

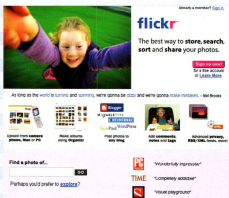
Slashdot (<http://slashdot.org>) is a classic example of community generated content. The site owners rarely produce content, rather it's a selection of daily news stories linked elsewhere. The content is generated by the community, who discuss and debate the story at hand. Using a process of comment 'rankings', only insightful or interesting comments are given prominence, thus creating a self-regulating, community-based, content site.

Tagging

Rather than categorising content with predetermined labels, tagging allows users to assign their own categories. Popular photo sharing site Flickr (www.flickr.com) can apply many custom tags. This relevant, customizable metadata aids in searching and dynamically grouping content.

Viral marketing

With websites being socially linked and community-based, a product can achieve exponential growth in awareness that could not be achieved with traditional marketing and advertising. One example could be a small, humorous video advertisement that propagates itself through email and website recommendations to achieve rapid global proliferation.



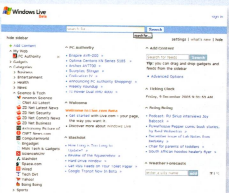
▲ Flickr.com houses user-uploaded photos, organised by custom tags.

Web 2.0

The traditional Web formula has been static Web pages, where users take a passive 'reading' role when accessing sites. Web 2.0 is a collection of services that allow, among many things, greater community participation, content syndication, advancements in Web-based user interfaces, and a new breed of Web services that create an entirely new application platform.

Wiki

A concept that epitomises the social nature of Web 2.0 is the wiki. Moving even further beyond user content like forums and photos, a wiki lets users create, edit and modify entire pages. While this sounds like a recipe for disaster, sites like Wikipedia.org prove that it's a powerful tool for generating large bodies of work quickly, with the added benefit of peer review to consistently improve it.



▲ Microsoft's personal Web portal, Live, employs AJAX to let you customise and order your page by dragging and dropping objects. Check it out at: www.live.com.

Office 12

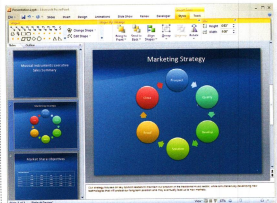
After tinkering with the pre-Beta release, **Simon Jones** gives a taster of what to expect in Microsoft's next Office suite.

Some PC enthusiast websites have been tripping over themselves to either condemn or rave about the proposed new user interface for Microsoft Office 12. Some have looked at the initial press release and decided it's a thoroughly bad thing, with even more of the irritating Clippy telling us the bleedin' obvious about what we've just been doing. Others have gushed about how great it will be to see all the commands, all the time. Well, neither of these descriptions is accurate, so let's see if we can separate some truth from this torrent of spin and hasty commentary.

At the Professional Developers Conference in September 2005, Microsoft unveiled a few details about the new user interface for Office 12, which won't be released until late 2006. This is a change that will affect most applications in the Office suite, and involves removing virtually all the menus and toolbars, then replacing them with a 'ribbon' of tool palettes, rather like those you find in a sophisticated graphics package such as Photoshop. The ribbon is a standard

'Microsoft decided it needed a radical rethink on the user interface.'

size, and presents the tools grouped into logical tabs and 'chunks'. So in Word, for example, you'd normally see tabs on the ribbon called Write, Insert, Page Layout, References, Mailing and Review. When you click on any tab, the ribbon changes to show the chunks and tools contained in that tab. If, say, you insert or select a picture, a new tab or tabs will be added to the ribbon containing tools you can use on that picture.



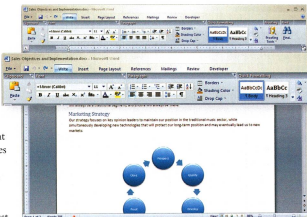
▲ Microsoft wants to move people away from the boring bullet-point approach to presentations with PowerPoint 12.

► Welcome to Office 12's streamlined new look: virtually all the menus have disappeared, to be replaced with a 'ribbon' of tools palettes.

If you think about it, the Pictures toolbar in the current version of Office accomplishes much the same thing, the difference being that you can show the Pictures toolbar even when you haven't got a picture selected, and it will just sit there with most of its tools greyed out (only Insert Picture and Compress Pictures are available until you actually select a picture). In the new Office 12 interface, the Pictures tab won't be seen unless you have a picture selected.

So far it all sounds pretty logical, but it's quite a radical departure from the previous

proliferation of menus, toolbars and task panes to which we've become accustomed. So why the sudden change? Well, back in 1989 when Word for Windows 1 was launched, it had some 50 commands on two toolbars. Word 95 had nine toolbars and over 100 commands. Word 2003 has more than 250 commands, 13 toolbars and 19 task panes. Along the way, various stratagems were tried to tame all these commands and present them logically to the user. Right-click context menus present a short list of commands for manipulating the object you just clicked on. The user is able to move toolbars around, docking them on any edge of the window or letting them float. You can show or hide any toolbar and customise them by dragging tools onto or off them. It's also possible to make your own toolbars with your own set of most frequently used tools. Office 2000 introduced Personalised menus and toolbars, where the commands you don't use very often get hidden and you have to hover over a menu or click the expand symbol (that double down-chevron at the bottom of the menu) to see all the commands.



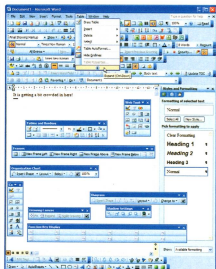
By default, the Standard and Formatting toolbars were made to sit on the same row, so there was rarely enough space to show all the tools: to get to the hidden tools, you had to click a tiny button at the end of the toolbar.

MORE HINDRANCE THAN HELP

Here's what we said in our original review of Office 2000: 'If your IT support department had a hard time with Office 97, where the users could move menus and buttons around at will, how will they cope with Office 2000 where the menus and buttons move around all by themselves?'

User-customisable toolbars have always been a nightmare for support personnel. When you're trying to explain to a user how to do something, you often have to tell them to click a particular tool on the toolbar. If they've hidden that toolbar, moved it or changed the tools on it, you can spend a lot of time playing 'hunt the tool'. And since menus and toolbars were merged into a single unified command system, users have been able to twiddle with menus as well as toolbars, and sometimes they do stupid things such as dragging the main menu until it floats, then closing it or pushing it right off the screen.

In short, while some people made good use of the opportunities to customise the user interface of Office applications, many just got confused. With Office 2003, Microsoft introduced the Customer Experience Improvement Programme (Help | Customer Feedback Options...). The first time they started up Office 2003, users were asked if they minded Microsoft collecting anonymous data about how they used the applications. Along with tracking errors, performance and hardware specifications, this program reported how users were customising their toolbars and menus. Microsoft discovered that the majority didn't customise ►



▲ Word 2003 had far too many toolbars.

anything, and that of those that did many of their customisations could only be classified as 'accidental' (like dragging the main menu onto the side of the window). The number of people who deliberately customise menus and toolbars is actually very small.

The 'personalised' adaptive menu and toolbar system had another serious drawback: for many users, their menus would get shorter and shorter over time. The user would look for a command and not see it on any of these short menus, and didn't wait for the menu to expand itself because they were in a hurry. They didn't understand the double down-chevron at the bottom of the menus either. So, not being able to find the command they wanted, they just scratched their heads and decided that the application didn't have that function, even though they could have sworn they'd used it six weeks ago. This problem has got so bad that the majority of requests Microsoft now receives for Office are for features that are already there but can't be found by the users.

So, with the applications growing in complexity and users unable to find the features they need, Microsoft decided it needed a radical rethink of the UI. One aim was to give the user one place to look for all the commands. If it isn't on the ribbon, it isn't in the application. Another aim was to group the commands more logically. The current arrangement of menus in Word – File, Edit, View, Insert, Format, Tools, Table, Windows, Help – sounds logical, but why is Page Setup on the File menu and not the Format menu, for example, and why isn't the option to insert a table on the Insert menu when the tool is actually called Insert Table? In Word 12, the tabs on the ribbon will probably be called Write, Insert, Page Layout, References, Mailings, Review. There will still be a File menu to deal with creating, saving, printing and emailing documents, and altering application preferences, but all commands associated with the content of the document

will appear on the ribbon. Interestingly, the current View menu seems destined to disappear altogether and is replaced by an enhanced status bar at the bottom of the window, which will show the current page number, a continuously updated word count, buttons for selecting the view style (normal, page layout, outline, web layout) and a slider control for the zoom percentage.

The ribbon tabs in other applications will reflect their particular mixture of commands, so Excel's will probably read Sheet, Insert, Page Layout, Formulas, Data and Review. In all the applications, extra tabs will appear after these standard ones whenever you select something that needs special tools. These tabs will show a coloured bar over the top of them to group them, so, for instance, selecting a chart in Excel will bring up the Chart Tools – three tabs labelled Create, Layout and Format.

CHUNKS AND GALLERIES

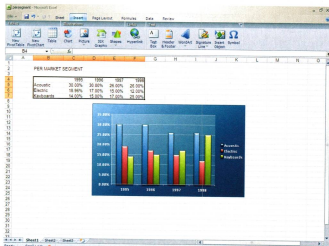
On every tab the tools are logically grouped into 'chunks'. Each chunk has a name at the top and contains one or more tools. Each tool can appear as a small icon, a small icon with text label or a large icon with text. Some tools, of course, appear as drop-down lists, option buttons or checkboxes, but all the tools and chunks negotiate with each other to set their sizes so as to exploit the whole width of the application's window. If you make the window smaller, the large icons will change to small ones. Go smaller still and the tools will lose their text labels. If there isn't enough space to sensibly show all the tools in a chunk, that chunk turns into a single large button, and clicking that button will show the chunk in full beneath the ribbon. If you make the window wider, the ribbon expands to fill the space available, showing more options in the galleries of styles and settings.

Galleries are another big innovation to help make Office more 'results orientated'. A gallery displays a set of little pictures, each depicting what this bit of your document would look like if you choose it. For instance, if you're editing a shape, the gallery might show you an outline square, a solid square, a solid square with highlighting, and a square with a drop shadow. As you move your mouse over these options, your shape changes to show it as outline, solid, highlighted or with a drop shadow, and you click the mouse when you like the effect. This type of 'live preview' is

implemented everywhere – your document changes as you point to each possible operation, but the change isn't made permanent until you click to select that choice. Each item in the gallery might have to set a dozen properties to achieve its effect, but the user doesn't have to worry about those.

They pick the overall look they want, and the application does the rest. Some galleries will be customisable, allowing advanced users or corporate IT departments to add to or restrict the choices available to the user. This should assist companies in setting up and maintaining corporate identities. And, of course, if you prefer to fiddle to the nth degree rather than accept a pre-prepared look, you still can – all the old dialog boxes remain available, either from a button at the top right of a chunk or as an option at the bottom of a gallery.

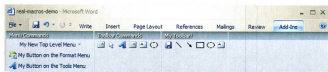
The new UI always presents the tools, chunks and tabs in the same order inside any one application, and they're not customisable – you can't move or resize the tools, chunks or tabs. Developers can add their own tools, chunks or tabs, but the only customisation available to end users is to copy a tool onto the Quick Access Toolbar, which usually sits between the



▲ Excel 12 uses the same 'ribbons' idea as Word 12, with extra tabs appearing when you select an item that needs special tools.

File menu and the first tab on the ribbon. The Quick Access Toolbar can also be expanded to fill the whole width of the window and placed below the ribbon. This level of minimal UI customisation by the user is a conscious decision by Microsoft to try to end the 'accidental customisation' and IT support nightmare engendered by the highly flexible menu and toolbar structures of Office 97 through 2003. Some users won't be pleased – if you were one of the few who took advantage of the facility to move tools to where you wanted them, you may be disappointed that you can't do the same in Office 12.

There's a whole host of other UI improvements in the pipeline too. Super tooltips will show a sentence or two about



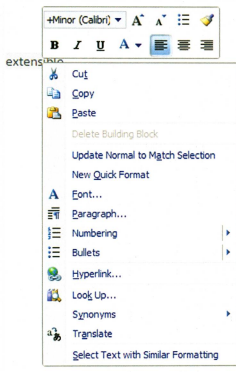
each tool rather than a word or two. They can also contain an illustration and a link to the full Help text about the tool. The MiniBar toolbar will fade into view whenever you've selected text, and it contains the top ten tools for manipulating selected text, saving you a trip to the ribbon to do those popular tasks. As you move the mouse towards the MiniBar it becomes more solid; move away and it fades again. A new keyboard access model shows the letters to type against the tabs, chunks and tools as you type, which makes every command in the ribbon and all the galleries keyboard accessible. All the familiar Ctrl key combinations remain the same and only the Alt key combinations will change, but there's a backwards compatibility option for the Alt key combinations for people who know all those old keystrokes by heart. However, there's no Classic Mode that represents the old menus and toolbars in Office 12, although existing add-ins and templates will still be able to present their custom menus and toolbars via a tab on the ribbon called Add-ins.

I LIKES WHAT I SEES

Microsoft certainly appears to be 'betting the

farm' that users will like Office 12's new face. I don't think there's much to dislike, and many of the new features will help users make good-looking documents more quickly. Where I do have some reservations, they're mainly to do with whether corporate IT departments will have enough control over the look of documents and, conversely, whether individual users will only pick from the top few gallery suggestions and so end up with documents that all look the same. All the new terminology like 'ribbon' and 'chunk' are only the codenames used by the developers for these new UI elements, and you can expect these terms to change once the marketing people have stuck their oars in. Also, the rather grey look of the ribbon may well change before release. I've sat through several hours of presentations about Office 12 and spent a few hours using a pre-Beta 1 version myself, and I generally like what I've seen. There's a long way to go yet, as Office 12 isn't expected to be on the shelves until the latter half of 2006. And, of course, there's a lot of new functionality to go with this new UI, and most of that hasn't even been seen yet. ■

Existing add-ins and templates are all accessible through the Add-Ins tab located on Office 12's new ribbon.



▲ The MiniBar fades in whenever you select some text or right-click (let's hope it doesn't charge you a fiver every time you pick something...).

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Remote control

Remote access to another PC can make your home or business network sing. **Leigh Dyer** rounds up the options.

As a sysadmin managing co-located servers, remote access is what makes my job possible, but it's handy for a lot more than server administration. A growing trend among Linux users with some need for Windows is to have a second cheap or older PC dedicated to it. With a good remote desktop service in place, you can access your Windows PC easily without

driver that improves performance. Under Mac OS X, the best options are the OSXVNC server (<http://www.redstonesoftware.com/vnc.html>), and Chicken of the VNC client (<http://www.geekspiff.com/software/cotvnc/>).

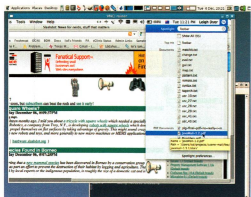
WINDOWS AND RDP

While VNC is a pretty good solution, being a lowest common denominator has its limitations, and there are more specialised solutions that work better in certain scenarios. For accessing a remote Windows system, Microsoft's RDP protocol is definitely the best way to go. It's more sophisticated and better integrated into the OS than VNC, so it's quite a bit quicker in use. It has some other neat features too, such as file sharing and even remote sound.

RDP was built for Terminal Server, Microsoft's thin client system, but as of Windows 2000 Server it's built-in and available for administrative access. Windows XP also has an RDP server, through its Remote Desktop features. The only catch on XP is that only one user is allowed to use the machine

rdesktop 192.168.1.10

rdesktop defaults to conservative settings designed for bandwidth-limited connections, but for LAN setups you can use the "-a 24" flag to switch to



▲ VNC tools are available for just about every OS.

having multiple monitors or a KVM switch set up. That's just one potential use around the home though, like remotely controlling a media PC.

VNC is probably the best known remote desktop system, and with good reason – it's free (and open-source), cross-platform, and works pretty well. There are official VNC packages available for Windows and Linux from <http://realvnc.com/>, but the protocol it uses, called RFB, is simple and well documented, and there are many alternative tools that support it.

The standard Linux VNC server is a bit odd as it runs as its own X server, rather than sharing your primary desktop. GNOME has a built-in VNC server now though, which you can configure using the 'Remote Desktop' preferences panel. Here you can enable the server, enable remote control (without this VNC clients can see, but not control, your desktop), and set a password to protect access.

If you've installed the standard VNC package on a Windows system and want to get remote access from your Linux box, you can use the standard xvnviewer client that should come packaged with your distribution. Alternatively, install the tsclient package – it's a nice GNOME interface to a number of remote desktop tools, including the VNC viewer, with a profile system for saving connection settings.

Beyond the official releases, UltraVNC (<http://ultravnc.sf.net/>) is a popular alternative for Windows – it comes with a custom video



▲ GNOME's VNC server is easy to configure

at a time – remote connections will throw a local user back to the login screen.

To enable Remote Desktop access on XP, click the checkbox in the Remote tab of the System Properties panel and set up your user accounts. Make sure your user has a password as well, using the User Accounts tool in the Control Panel, since XP wisely doesn't allow remote access without a password. Enabling Remote Desktop access should automatically tweak the XP SP2 firewall to allow access, but if you use another firewall you'll have to manually allow TCP port 3389 incoming.

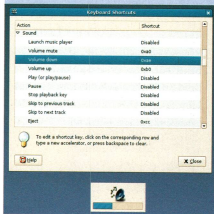
To connect to your RDP server under Linux, use the "rdesktop" tool, which should be packaged in every distribution. At its simplest it just needs the name of the machine to connect to:

Hot Keys

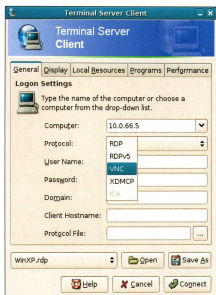
I use my keyboard a lot, and my usual 'board of choice is a Happy Hacking Keyboard – it uses full-size keys in a laptop-like layout, so it's tiny but great to use.

Recently though, a few games of Tetrinet have put cursor keys (which the Happy Hacking lacks) on the agenda. I started shopping for a nice USB keyboard, and settled on Apple's standard model, since it has a nice action and it's quite small and elegant for a full-size keyboard.

I wasn't surprised when I plugged it in and could immediately type on it, since Linux does a nice job of handling basic USB stuff. The neat part was the volume and eject keys – all I had to do to get these working under GNOME was to open the Keyboard Shortcuts preferences, click on each action, and press the appropriate button. I remember using a tool called 'hotkeys' years ago to do the same thing, but configuring it meant manually editing XML files, so it's great to see these features so nicely built into our desktops today.



▲ You can use keyboard shortcuts in GNOME to control volume, among other things.



▲ tsclient puts a pretty face on various remote desktop tools.

true-colour video. The `-r` flag handles device redirections. For instance, to share your home directory to your remote session, try this:

```
rdesktop -a 24 -r disk:home=/home/leigh
192.168.1.10
```

There are other `-r` options to redirect serial and parallel ports, printers, and sound.

REMOTE KVM HARDWARE AND ON LINUX

Software isn't the only way to handle remote desktop access – you can get full hardware products as well. Spending money on hardware may seem like overkill when there are good free software solutions, but software relies on having a working OS. With a hardware option, you can get full access, down to the BIOS level, and even when the OS install is in major trouble.

Many new servers come with these kinds of features built-in today, but we decided to retrofit our existing servers with an external remote KVM setup. When combined with a remote power unit, which is basically a fancy powerboard with a web interface to turn each port on and off, you can get yourself out of just about any mess remotely.

We decided on an Avocent Switchview IP remote KVM device, which has a single set of keyboard, mouse, and video inputs that it exposes via a web interface, and a matching 8-port KVM switch. Since the KVM switch has keyboard shortcut controls, this lets us control eight machines with the one IP box.

It's a neat little device really – its hardware digitises the incoming video signal, performs delta encoding and other tricks to compress the data, and then sends it across the network. It has an SSL-enabled web interface for configuration,

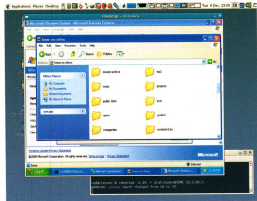
which is also used to launch its client application. The only fly in the ointment is that the client uses ActiveX, which means that Internet Explorer on Windows is the only supported client platform.

The IE requirement is annoying, but it's not a show-stopper, since IE now runs pretty well on Linux. Wine, the little Windows API replacement that could, has finally hit beta after more than a decade of alpha releases, and it now runs an amazing range of applications. Installing IE manually still requires some tweaking, but the IE4Linux project (<http://www.tatanka.com.br/ie4linux/>) has a script that can do the work for you. It requires the cabextract and wget packages, and a working Wine install of course.

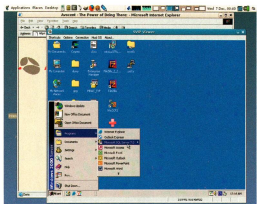
Download the IE4Linux package from the website, extract it, and run the 'ie4linux' script inside. It has profiles for installing IE 5.0, 5.5, and 6, and you can choose to install all three if you like, but 6 was fine with me. Make your choice, and sit back while it downloads and installs the required packages. The script uses pre-installed IE packages from browsers.evolt.org, so there's no interaction required.

When complete, you'll find an 'ie6' script in your `~/bin/` folder, and possibly an IE icon on your desktop – run that and IE should pop right up. In fact, it's quicker to start from cold than my Linux-native Firefox setup, and in operation it's very smooth and responsive. Everything works as you'd expect it to, including the Switchview IP's ActiveX-based client.

Having to run IE at all isn't fantastic, but it's great that we can now do it so well on our favourite platform. When I'm wearing my web development hat, testing in IE is something that just can't be avoided, since so many people still use it despite its flaws. At least now, I can run it without firing up Windows, and without worrying quite so much about security. Wine is fairly impervious to viruses for the moment, since it just doesn't have enough low-level compatibility to run most of them. If you're still feeling a bit paranoid, create a user just for your IE install – that way, all that's at risk is your easily-reinstallable IE setup.



▲ rdesktop gives you remote desktop, networked files, and more.



▲ See IE run. Run IE run!

Tunnel to freedom

When running remote desktops across the Internet, security is a major concern, and VNC's simple passwords and poor crypto support isn't fantastic. If you're connecting to a Linux box though, or if you're running one as a firewall, you can use SSH tunnels to encrypt and compress your sessions. SSH tunnels accept connections to a port on your local machine, and forward it to a port on a machine accessible to the SSH server.

Assuming you have SSH set up already, running tunnels is a snap. Use the `-C` flag to enable compression, and the `-L` flag with appropriate arguments to add a tunnel. For instance, to tunnel port 5901 on your local machine to port 5900 (the standard VNC port) on the machine 192.168.1.20 inside your office firewall, try something like this:

```
ssh -C -L 5901:192.168.1.20:5900
firewall.office.com.au
```

You should then be able to connect your VNC client to localhost:1. This connects to local port 5901, with the data sent through the tunnel to the VNC server at the other end.

As you can imagine, SSH tunnelling is a very handy trick to know. Recent versions can even act as a SOCKS tunnelling proxy – check the `-D` option in the manpage for more detail. Between Linux machines, you can also export the display of a single application across the network using X11 forwarding. Use the `-X` option when logging in, and any X apps that you run remotely will automatically display locally.



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GAMELABS

The Christmas games bonanza continues. **Ben Mansill** rounds up the best of the holiday season's entertainment.

BYTES

THE NUMBERS GAME

Sudoku is quite the craze. The puzzle game is wonderful brain exercise and now there's a computer version. Sudoku Unlimited from Mindscape has a big range of grid sizes and features, including a clever coaching mode. Play on-screen or print out the puzzles. No more waiting



for the Sunday paper, there are billions of puzzles in this box. \$19.95 www.mindscape.net.au for details.

THE ADVENTURE CONTINUES

Adventure gamers rejoice! The game genre that has skirted extinction still has some fight left. THQ has announced a new Broken Sword game - Broken Sword: The Angel of Death. Once again Charles Cecil will be producing the game, as he has every game in the series. It's the fourth in the series and promises the same high quality storyline that has defined the previous games.

CELEBRITY GAMERS

Jonathan 'Fatality' Wendel's ascension as the face of gaming has been fuelled by a 60 Minutes story about him. The US program has been following Master Wendel around the tournament circuit for most of the last year. Wendel certainly deserves the attention, during the 2005 CPL finals in New York, he competed in five different games, which is unprecedented, and took home the world title. The Fatality name has been used to endorse several products this year, and we excitedly look forward to seeing more amusing celebrity gamertags being used in this manner.



Direct Distribution is the new buzzword in gaming. Simply, it's buying your games online and downloading them to your PC, cutting out the process of visiting a games shop and negotiating the need for a CD, box and manual.

Valve pioneered the model with its controversial Steam system, which was a love/hate affair with many gamers. But mostly hate. With Steam, Valve insisted that a gamer be logged onto Steam whenever they wanted to play a game, something of a fiddle when Half-Life 2 was released and millions of gamers worldwide all converged on Steam's overloaded servers.

However, the act of downloading the game itself proved effortless and was cleverly implemented. What made it work was Steam releasing elements of the game for download as the company had finished work on that particular element, meaning downloading several hundred megabytes of data was split across many weeks as the game neared completion.

Other publishers are now adopting Direct Distribution, with Electronic Arts being the latest. Its EA Downloader was recently launched, with Battlefield 2: Special Forces being the first game distributed online.

Direct Download means no game boxes or CDs, or their associated production and distribution costs. Cutting out the retail middleman and their slice of the profit pie is lucrative, however game publishers have not been sharing the savings with consumers. *PC Authority* spoke with EA's Online Manager, Liam McCallum, who confirmed that games purchased using EA Downloader will cost the same as retail boxed versions.

While we appreciate the speed and efficiency of downloaded games, we also like game manuals and nice boxes, and if we're to do without those, we'd like to see at least \$20 lopped off the price. Let's hope that as other publishers follow this path, the substantial savings involved will be passed along to consumers, or we'll just keep buying retail versions.



▲ EA is adopting direct distribution for its new Battlefield 2: Special Forces game. Expect many more games to be added in the near future.



Red Orchestra: Ostfront 41-45

Enemy at the gates

DEVELOPER Tripwire Interactive **WHEN** Q1 2006
WEB www.redorchestragame.com

Set on the eastern front during WW2, Red Orchestra: Ostfront 41-45 promises an incredibly realistic infantry combat experience. Unlike the heavily scripted and cinematic Call of Duty, Red Orchestra aims to be as accurate a representation of the war on Germany's eastern front as possible. That means that there will be no crosshairs, so vicious battles will become incredibly intense as players aim carefully down the sights of their weapons.

Red Orchestra features an arsenal of some 28 weapons, including bolt-action rifles, submachine guns and semi-automatic pistols. Despite the focus on infantry, there are also 14 vehicles to hop into and control, ranging from half-tracks to heavy tanks.

Based on the Unreal engine, Red Orchestra supports up to 32 players online, allowing gamers to pick their side and duke it out on maps based on locations such as Stalingrad and Berlin.

Red Orchestra won't fail to impress technology-wise, despite using an older dated engine. Tripwire Interactive has developed an advanced movement system, giving players the ability to dive over obstacles and lean around corners. Red Orchestra also features distance-based sound, heightening the feeling of battle as gunshots and explosions echo from across the map.

Christopher Taylor



Unreal Tournament Envy

The third deadly sin

DEVELOPER Epic **WHEN** 2007
WEB www.unrealtournament2007.com

When it was released back in 1999, Unreal Tournament did pretty much everything right. It entertained gamers with a swag of game modes, ranging from old favourites like death match and capture the flag to relatively new ideas such as assault, which saw teams alternatively attacking and defending specific objectives.

Envy, the next in Epic's Unreal Tournament franchise, promises all that and more. Based on the third generation of the Unreal engine, the game sure looks pretty, featuring some amazing lighting, textures and character detail. The physics have also been improved, allowing for destructible environments and more realistic vehicle handling.

Envy will also introduce a new game mode called Conquest. Playing a bit like a massively multiplayer game, Conquest mode will see players fight campaigns across multiple maps, tackling objectives like destroying bridges, which in turn alters the dynamics of the battle.

To help fight the battle there are eighteen vehicles and an arsenal of weird and wonderful weapons including dual pistols, futuristic shotguns, and a canister gun that can fire eight-legged mines and blobs of radioactive sludge that explode upon contact with an enemy.

Like previous titles in the series, Envy promises to deliver some seriously fast-paced, blood-soaked fun.

Christopher Taylor





Rollercoaster Tycoon 3 Gold

The idea behind Rollercoaster Tycoon 3 is about as complex as the game itself: you're the manager of a theme park and you have to design rides and market the place in order to make money.

It's all handled through a typical sim interface, meaning anyone who has played games like this before will pick up the controls in no time. For sim virgins, there are also a number of tutorials to introduce some aspects of park management, but for the most part it's up to you to figure things out.

Once you've grasped the basics, you can play through scenarios which have you improve upon already established parks to meet goals such as having a certain amount of patrons pass through your gates.

Graphics-wise, Rollercoaster Tycoon 3 is amazing. The parks are rendered in amazing detail, right down to the clothing the visitors wear and the pools of vomit they leave as they exit your rides.

The Gold pack also contains the two add-ons – Soaked! and Wild!

SOAKED!

As the title suggests, Soaked! is all about water. It comes complete with a number of new scenarios and rides, including whale shows, pools and aquariums. None of these additions are terribly inspiring, but considering that Soaked! is bundled freely with the original in the Gold pack, they don't really hurt.

WILD!

Aside from a handful of new scenarios and a few new rides, Wild! introduces animals to your theme park. You're able to build enclosures and populate them with animals, which in turn need to be well fed and looked after. The animal management aspects of the game are surprisingly deep and addictive, and well worth giving a go.

Christopher Taylor

REQUIREMENTS

1GHz processor, 256MB RAM, 64MB graphics

SUPPLIER Atari

PRICE \$69.95

www.rollercoastertycoon.com/

FOR

Pretty graphics; lots of options; addictive animal management add-on.

AGAINST

Poorly designed tutorials; sometimes too many things to do.

OVERALL

★★★★★☆☆

The Movies

This happy package offers absorbing gaming and an insight into what sends film directors mad. Elements of The Sims run strong, as predominantly this is a resource management game, with your film studio employees being the resource. While

scriptwriters and street cleaners happily beaver away at their assigned jobs, film stars are difficult, temperamental and more often than not, alcoholics. Half the fun and challenge in The Movies is coaxing drunk or angry actors into filming scenes. Typically, your star actress will be a little cross because she found out that the co-star is being paid more than her, plus, she's chucking a tanty because the scene she's supposed to be filming means she has to kiss an old lover. So, she hits the turps and needs 6 months in rehab (on full pay) before she can earn her keep again, but you keep her on because the fans don't know any of this and love her. Now that's gameplay!

Lesser – but still fun – gameplay is building buildings. Like rehearsal studios, scriptwriting offices, and a large range of bars. The lot needs food and toilets, hedges and shrubs, sports cars and basketball courts – all the things that keep your employees happy and working hard.

Topping it off are the movies themselves, which you 'script write' by clipping together

predetermined sequences, but customising the setting, costumes and effects. Want a sad but pretty lady smoking a cigarette, looking mournful, sitting on a cactus with a cowboy gunfight going on behind her? You got it!

Ultimately, this is a very pleasant diversion and offers deep and unusual gaming.

Ben Mansill



REQUIREMENTS

800MHz CPU; 256MB RAM; DirectX9 graphics

SUPPLIER Activision

PRICE \$89.95

www.lionhead.com/themovies/

FOR

Original and varied gaming; you'll never watch a film the same way again.

AGAINST

Graphics lack style; actors a little too nutty.

OVERALL

★★★★★☆☆



X3: Reunion

On paper, X3: Reunion is an astounding game. It features a sweeping storyline, open-ended gameplay, an authentic economic model, and gameplay choices that have you piloting a fighter craft, or managing a huge trading empire. It's a grand idea that takes the wishes of every space sim fan and throws it all into one neat box. Unfortunately, developer Egosoft couldn't quite twist these elements together into a fun, playable game. Instead, we have a messy interface, an unnecessarily steep learning curve, and an inane plot that gets less interesting the more you move through it.

The clunky interface is the biggest sticking point. It needed to be something exciting and innovative to allow players to engage in furious space combat, and then switch over to top-level strategy and management. Instead, it does neither very well. The space combat is too simplistic, and the management interface consists of page after page of menus and windows. This fundamentally poor design is further complicated by tiny buttons which are difficult to see and harder to navigate, and menus laid out in an illogical way, resulting in a large time investment just to find your way around.

Otherwise, this is a very well thought out game, which makes it all the more unfortunate. Once you've mastered it, you'll be building up a



trade empire and expanding through the galaxy. And what a galaxy! It's big, gorgeous, and each sector is brimming with life. But the dodgy interface and learning curve means many won't get to experience it. If you're a fan of the series,

or a space sim fan with much time to invest, add two stars to the final score and prepare for a long haul. Everyone else, steer clear.

David Kidd

REQUIREMENTS

Pentium 4 1.7GHz; 512MB RAM; 64MB 3D graphics card with DirectX 9.0c; 2GB HDD; DVD ROM.

SUPPLIER QV Software

PRICE \$89.95 RRP

⤵ www.egosoft.com/games/x3/info_en.php

FOR

Lush graphics, complex world.

AGAINST

Interface, story line, unnecessarily high learning curve.

OVERALL

★ ★ ★ ★ ★

Call of Duty 2

Call of Duty 2 is as tightly scripted as a Spielberg film, and all the better for it. Most FPS games let you loose in big levels and leave it up to you how you clear it. This game has set-piece battles that are precisely scripted, and this, perhaps ironically, adds to the sense that you're really in a war zone. The designers have been able to create battle sequences that bring a cast of tanks, aircraft, artillery and many dozens of soldiers together in movie-like chapters.

The results are spectacular. All around you the battlefield rocks with tremendous explosions, aircraft zoom overhead, tanks rise over hills and lumber towards your position, followed by hundreds of enemy soldiers as you take control of an 88mm canon and let 'em have it.

It wraps you up completely. The voice acting in particular is extremely good, with rallying cries and barked orders surrounding you, often drowned out by the almost non-stop whump of artillery landing nearby. It is most war-like. Very rarely will you have a moment to take a breather and survey the situation. It's go, go, go in this war and you'll be in a constant state of fighting for survival.

It's not all rosy, though. The game is driven by 'triggers' that set off pre-scripted sequences which, while enhancing the cinematic feel, can also be abused. Your AI soldier boys will follow you anywhere, and a few suicide runs will have them eventually swarm any defense.



All up, it's a precisely crafted war game that offers a particularly satisfying single-player game. If you're not over the genre yet, check this out.

Ben Mansill

REQUIREMENTS

1.4GHz or higher CPU; 64MB DX9 graphics; 256MB RAM

SUPPLIER Activision

PRICE \$89.95

⤵ <http://www.callofduty.com/cod2/>

FOR

It's just like a WWII movie, but with you stuck in the middle.

AGAINST

AI scripting is open to abuse.

OVERALL

★ ★ ★ ★ ★

On the CDs

Your guide to this month's cover discs

XARA XS 2.0

With support for vector drawing, GIF animation, Web graphics and photo editing, Xara XS 2.0c provides a flexible, fast and easy to use drawing tool that could be the only drawing tool you'll ever need. Xara XS 2.0c allows you to quickly design great graphics, even if you're artistically talentless.

UPGRADE OFFER

Save over 20 percent on Xara Xtreme. Xara Xtreme takes everything you'll find in XS, and adds a whole lot more. Like some major new effects, for instance. A Bevel tool gives any object an apparently raised edge, customisable with different bevel types, size, light angle and elevation.

You can upgrade to Xara Xtreme with a saving of over 20 percent. Visit xara.com/xtreme and order the program, entering your XS registration email and password to qualify for the discount, but be quick - this offer only lasts 60 days.



PARAGON DRIVEBACKUP 2004



What features would you expect from an image backup tool? Copying your entire hard drive? In a few clicks, Paragon Drive

Backup will make an exact copy of one hard drive onto another, ideal if you're upgrading to a new machine. Paragon Drive Backup can also create and format partitions in a range of file system formats.

UPGRADE OFFER

For more options you should upgrade to Paragon Partition Manager 6.0. This lets you resize partitions without data loss, merge partitions, change partition parameters, and more. Read more, or buy at www.paragon.ag.

ADOBE PHOTOSHOP ALBUM STARTER EDITION 3.0

There's no shortage of tools around to organise your digital photo collection, but as you'd expect from Adobe, this is a cut above the rest. Restore order to your messy digital photo collection with this polished image organiser.

UPGRADE OFFER

Photoshop Elements 4 takes the best features from Album, then struts in ingenious automation that makes the program even easier. Find out more from www.pacificadobe.com/products/photoshopelwin/

CONCEPTDRAW PROJECT 1.3.6

Most people think of project management software as aimed at big corporations, to help handle giant projects like building an airport - but the basic management principles involved are just as useful with personal projects. So whether you're building an extension, organising a holiday, or planning a wedding, ConceptDraw Project can help.

UPGRADE OFFER

Head over www.conceptdraw.com/en/project/upgrade.php, choose ConceptDraw 1.x Standard from the list, and enter your 1.3.6 registration code to receive a special upgrade



PARAGON EASY CD/DVD RECORDER

Burning data CDs or DVDs can be a complicated business, as you wade through complicated dialog boxes packed with a mass of irrelevant options. Need a simpler way? Install Paragon Easy CD/DVD Recorder, and you'll be able to make speedy data backups with the absolute minimum of mouse clicks.

UPGRADE OFFER

As a registered owner of Easy CD/DVD Recorder, you're entitled to 20 percent off your next Paragon purchase. Choose from utilities for hard drive backup, partitioning, encryption, data recovery and more at www.paragon.ag.



GAME CIVILIZATION IV

Civilization IV is the perfect game to jump into and instantly forget about anything else. This demo contains the full tutorial, plus a 100-turn gameplay demo. Just enough to get you addicted to this wonderful game!



FEATURED ARTIST BEASTS OF BOURBON

A treat for indie rock lovers this month when we present a true Australian supergroup of the Australian pub rock scene. Forming in Sydney in 1983, the original Beasts of Bourbon lineup comprised Tex Perkins (vocals, later of the Cruel Sea), Spencer Jones (guitar, also with the Johnny's), James Baker (drums, and a Hoodoo Guru) and guitarist Kim Salmon and bassist Boris Sudjovic from the Scientists.



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DISC REPLACEMENTS

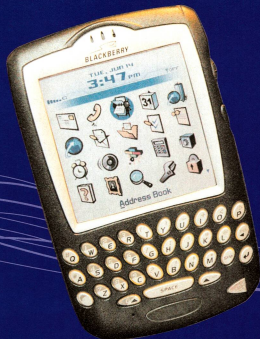
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BUYERS GUIDE

Your one-stop tech shop

The A-List ★★★★★

THE BEST OF THE BEST
IN 45 CATEGORIES.

Like last month, there were price drops across the board. But there was one standout bargain deal this month that you can't go past. The HP iPAQ hw6515 not only saw a price drop down to \$704, but the cheapest supplier we found is also throwing in a \$400 TomTom Navigator. Turn to page 108 for the details.

The A-List



HOW IT WORKS:

All A-Listed products are listed with the cheapest price and cheapest supplier.

Reviews Roundup

THE LATEST REVIEWS,
RANKED, AND RATED.

The graphics card has been the highlight of the Labs for the past few months. There are some huge shifts in this month's line up, with all four cards tested this issue making their way into the top 10. Also, if you missed out on last month's GPS roundup, you can find them ranked and ordered on page 115. Finally, we take a look at a next gen graphics card on page 117.

Reviews Roundup



HOW IT WORKS:

Prices listed in our Reviews Roundup show the price at the time of review.

Products that come top of PC Authority's Labs group test are Labs Winners.



A great product that excels in one, or many, areas.



The A-LIST

★★★★★ Only the absolute best of the best make it to PC Authority's A-List.

VALUE PC

PCMarket SDS-G2 AMD Athlon64 GDCS



PRICE: \$1499

DELIVERY: \$44 to \$99

SUPPLIER: PC Market 02 9898 3055

INTERNET: www.pcmarket.com.au

ISSUE: January 2006, page 42.

VERDICT: If your budget is tight but you want a good all round system, then PC Market delivers. It sports a decent 17in LCD, good keyboard, mouse and speakers.

SPECIFICATIONS: 1.8GHz Athlon 64 3000+; 1GB PC3200 RAM; 160GB hard disk; Dual Layer DVD-RAM writer; GeForce overlocked 6600GT graphics; 17in CMV LCD; Ozaki Z.1 speakers; Windows XP Home; 1yr RTB warranty.

HIGH-END PC

Scorptec Stinger



PRICE: \$3900

DELIVERY: \$25 - \$85

SUPPLIER: Scorpton Technology Computers 1300 726 770

INTERNET: www.scorptec.com.au

ISSUE: December 2005, page 48

COMMENTS: A great package that offers excellent peripherals including a great 19in LCD. It's powerful and practically silent too. But pay \$150 more for the 3yrs on-site warranty.

SPECIFICATIONS: 2.2GHz Athlon 64 X2 4400+; 1GB PC3200 RAM; 500GB hard disk; Dual layer DVD-RAM writer; Dual layer DVD-writer; GeForce 7800GTX graphics; 19in Samsung LCD; Logitech 5.1 speakers. Windows XP Pro; 1yr RTB.

'A very powerful system with little in the way of weak points.'

MID-RANGE PC

Dell Dimension 9100



PRICE: \$2598

DELIVERY: \$99

SUPPLIER: Dell 1800 812 393

INTERNET: www.dell.com.au

ISSUE: October 2005, page 44

COMMENTS: A stylish dual-core system based on BTX architecture. The 17in LCD is great and can be upgraded to 19in for \$100. It now comes with 2GB of RAM too.

SPECIFICATIONS: 3GHz Pentium D 830; 2GB PC2-5300 RAM; 160GB hard disk; dual-layer DVD writer GeForce 6800 graphics; 17in Dell LCD; Windows XP Home; 1yr on-site next business day warranty.

MEDIA CENTER PC

Enspire AVR-200



PRICE: \$1699

DELIVERY: \$15 to \$30

SUPPLIER: Enspire Digital 1300 880 070

INTERNET: www.enspiredigital.com.au

ISSUE: January 2006, page 43.

COMMENTS: Coming in at over \$1000 less than the competition, this is whisper quiet, looks fantastic and is only 108mm high. Throw in two digital HD tuners and it's a bargain.

SPECIFICATIONS: 1.8GHz Athlon 64 3000+; 512MB PC3200 RAM; 200GB hard disk; Dual-Layer DVD writer; 2 HDTV digital tuners; 802.11a/b/g WLAN; MCE remote; Windows XP Media Center Edition; 1yr on-site warranty.

BUSINESS PC

Dell Optiplex GX620 USFF



PRICE: \$1439

DELIVERY: Free

SUPPLIER: Dell 1800 812 393

INTERNET: www.dell.com.au

ISSUE: October 2005, page 57.

COMMENTS: This incredibly compact PC can even bolt to the back of a LCD (the one pictured isn't included in the price), yet still includes a powerful 3GHz Pentium 4 processor.

SPECIFICATIONS: 3GHz Pentium 4 531; 512MB PC4300 RAM; Intel 945G Express chipset; 80GB HDD; combo CD-RW/DVD-ROM; Gigabit Ethernet; 7 x USB 2; DVI-I with VGA; Windows XP Pro; 3yr on-site; B9 x 266 x 264mm (WDH).

ULTRAPORTABLE NOTEBOOK

Dell Latitude D410



PRICE: \$3326

DELIVERY: Free

SUPPLIER: Dell 1800 812 393

INTERNET: www.dell.com.au

ISSUE: November 2005, page 44

COMMENTS: At 1.95kg, the D410 is very portable and will last too. With a 2GHz Pentium M processor it also packs a powerful punch when used as a main system.

SPECIFICATIONS: 2GHz Pentium M 760; 1GB RAM; 60GB HDD; 8X DVD writer; Intel GMA900 graphics; 12.1-in 1024 x 768 LCD; Bluetooth; 802.11a/b/g WLAN; Media Slice; Windows XP PRO; 3yrs on-site warranty; 1.95kg.

BUSINESS NOTEBOOK

Dell Latitude D610



PRICE: \$2713

DELIVERY: Free

SUPPLIER: Dell 1800 812 393

INTERNET: www.dell.com.au

ISSUE: September 2005, page 38

COMMENTS: With updated Centrino inside, the Latitude D610 is a forward-looking business notebook. Highly configurable, and perfect for business.

SPECIFICATIONS: 2GHz Intel Pentium M 755; 512MB PC4300 DDR2 RAM; 80GB HDD; combo DVD/CD-RW; Intel GMA900 graphics; 14.1-inch 1400 x 1050 LCD; 802.11b/g WLAN; Windows XP Pro; 3yr on-site NBD warranty; 2.5kg.

POWER NOTEBOOK

ITC Metabox 740



PRICE: \$4999

DELIVERY: \$55

SUPPLIER: ITC (08) 9486 7166

INTERNET: www.itcchannel.com.au

ISSUE: September 2005, page 43

COMMENTS: A new name for the mother of all laptops but it still sports LightScribe and GO 7800 GTX graphics giving it huge grunt and features. A 6KG weight and one hour battery limits portability.

SPECIFICATIONS: 3.66GHz Pentium 4 660; 2GB PC2-533 RAM; 160GB HDD; 8x LightScribe DVD Writer; Geforce GO 7800 GTX graphics; 17in 1920 x 1200 LCD; Bluetooth; 802.11b/g WLAN; Windows XP MCE 2005; 1yr RTB warranty.

VALUE NOTEBOOK

Compaq Presario V2340AP



PRICE: \$1099

DELIVERY: \$20

SUPPLIER: www.pc.net.au

INTERNET: www.hp.com.au

ISSUE: January 2006, page 38

COMMENTS: It might not offer power for hardcore encoding or gaming, but this bargain of a notebook is well built, light at just 2.38KG and offers two hours battery life.

SPECIFICATIONS: 1.4GHz Celeron M 360; 256MB PC2700 RAM; 40GB HDD; Combo drive; Intel 915GM; 14in 1280 x 768 LCD; 10/100 Ethernet; 802.11a/b/g WLAN; 3 x USB 2; D-Sub; XP Home; 1yr RTB warranty; 230 x 335 x 39mm (WDH).

COMPACT DIGITAL CAMERA

Canon Digital IXUS 55



PRICE: \$479

DELIVERY: \$15

SUPPLIER: www.gamedude.com.au

INTERNET: www.canon.com.au

ISSUE: December 2005, page 64

COMMENTS: This sports a quality 3x optical zoom and a 5MP CCD. Plus, it has a desirable chassis that slips easily into a pocket, and incredibly quick operation.

SPECIFICATIONS: 5MP; 2592 x 1944 resolution; 3x optical zoom; 2-inch LCD; 1/1,500 to 15 secs shutter; 50-400 ISO; +/-2EV; 640 x 480 movies; SD slot (16MB supplied); Li-ion battery; 84 x 22 x 56mm (WDH); 160g.

HIGH-END DIGITAL CAMERA

Canon EOS 350D



PRICE: \$1297

DELIVERY: \$25

SUPPLIER: www.camerafarm.com.au

INTERNET: www.canon.com.au

ISSUE: June 2005, page 70

COMMENTS: With the same stunning image quality as the 300D, but this time with a slightly higher resolution, faster operation and even more compact body, this is the number one choice for semi-pros.

SPECIFICATIONS: 8MP CMOS; 3456 x 2304; 18-55mm Canon EF-S lens; 1/8000 to 30 secs shutter; 100-1600 ISO; +/-2EV; CF & CF-II CARDS; Lithium-Ion battery; 127 x 64 x 95mm (WDH); 540g.

20+ INCH LCD

Philips 200W6



PRICE: \$910

DELIVERY: \$35

SUPPLIER: www.scorpnet.com.au

INTERNET: www.philips.com.au

ISSUE: January 2006, page 75

COMMENTS: The price of 20-in LCDs is plummeting and this one is a decent performer too. Add to the mix a widescreen format with a 1680 x 1050 resolution and the 200W6 becomes incredibly desirable. No more 1280 x 1024 LCD limitations!

SPECIFICATIONS: 20.1in LCD; 16ms response time; 300cd/m2 brightness; 600:1 contrast ratio; native resolution 1680 x 1050; D-Sub and DVI-D inputs; TCO 03; 478 x 235 x 376-429mm (WDH); 7.8KG.

'A great combination of quality and low price.'

HDV CAMERA

Sony HDR-HC1



PRICE: \$2479

DELIVERY: \$20

SUPPLIER: www.pc.net.au

INTERNET: www.sony.com.au

ISSUE: November 2005, page 50

COMMENTS: Sony breaks new ground, introducing high-definition. With awesome quality, you'll never be able to go back to standard PAL resolutions again.

SPECIFICATIONS: 1080/50i HDV (1440 x 1080 at 16:9); DV recording; 2.97-MP CMOS; 10X optical; electronic image stabiliser; 2.7-inch LCD; 71 x 188 x 94mm (WDH); 680g.

The A-LIST

PORTABLE PROJECTOR

Dell 3400MP



PRICE: \$2698
DELIVERY: Free
SUPPLIER: Dell 1800 812 393
INTERNET: www.dell.com.au
ISSUE: November 2005, page 53
COMMENTS: Top of the crop, thanks to a low asking price and equally low running costs; a weight of just 1.1kg, complete with petite dimensions; and solid all-round image quality.

SPECIFICATIONS: DLP; 1024 x 768 resolution; 1500 ANSI; 1.5-10M throw distance; 1.2x optical; 2000:1 contrast; Mi-DIA interface; 2yr warranty; 204 x 154 x 74MM (WDH); 1.1kg; Running costs: 10c per hour.

HIGH-END PDA

HP iPAQ hx4700



PRICE: \$695
DELIVERY: \$15
SUPPLIER: www.implex.com.au
INTERNET: www.hp.com.au
COMMENTS: It may be big compared to other PDAs, but the hx4700 provides near-notebook flexibility thanks to the amazing 4in 480 x 640 screen, great software bundle - including the excellent Pocket Informant 5 - and the ability to add up to 5GB of storage.

SPECIFICATIONS: 624MHz Intel CPU; 64MB RAM; 128MB ROM; 480 x 640 LCD; SD/MMC/SDIO, Type II CompactFlash; 802.11b; Bluetooth; IR; Outlook 2002; Pocket PC 2003 SE; 17 x 15 x 13mm (WDH); 187g.



'It provides near-notebook flexibility, thanks to the screen.'

VALUE PDA

palmOne Tungsten E2



PRICE: \$327
DELIVERY: Free
SUPPLIER: www.digitalcityonline.com.au
INTERNET: www.palm.com/au
ISSUE: September 2005, page 46
COMMENTS: This is the ideal partner for your Bluetooth mobile. And with good battery life, a great screen and compact dimensions, it's also a fine PDA. **Contact** navid@digitalcityonline.com.au.

SPECIFICATIONS: 200MHz Intel CPU; 32MB flash; 320 x 320 LCD; SD/MMC/SDIO; Bluetooth; IR, USB; Palm Desktop; Documents To Go 7; Palm OS 5.4; 78x15x114mm (WDH); 133g; Li-Ion battery; 84 x 22 x 56MM (WDH); 160g.

17-INCH LCD

ViewSonic VP730b



PRICE: \$450
DELIVERY: \$25
SUPPLIER: www.scortec.com.au
INTERNET: www.viewsonic.com.au
ISSUE: January 2006, page 43
COMMENTS: The VP730b's stand is one of the best we've seen, flexing generously in every direction. Performance is good with movies, games and applications. It all comes at a negligible premium too.

SPECIFICATIONS: 17-in; 8ms response time; 300cd/m2 brightness; 500:1 contrast ratio; native resolution 1280 x 1024; DVD-D, 2 x D-Sub inputs; TCO '99. Dimensions 372 x 279 x 477mm (WDH); 5.7Kg.

MOBILE COMMUNICATIONS

HP iPAQ hw6515 Mobile Messenger UPDATED



PRICE: \$704
DELIVERY: \$15
SUPPLIER: www.pc.net.au
INTERNET: www.hp.com.au
ISSUE: November 2005, page 49
COMMENTS: This GPS-equipped BlackBerry killer also sports a 1.3-megapixel camera and quad-band phone. Buy before March and get TomTom Navigator (worth \$399) Free!

SPECIFICATIONS: 312MHz Intel CPU; 64MB RAM; 64MB ROM; 320 x 320 LCD; SD & Mini SD slot; 1.3-MP camera; IR; Bluetooth; GSM/GPRS/EDGE quad-band; GPS; Pocket PC 2003 SE; 71 x 21 x 18mm (WDH); 165g.

MP3 PLAYER

4GB iPod Nano



PRICE: \$345
DELIVERY: Free
SUPPLIER: www.digitalcityonline.com.au
INTERNET: www.apple.com/au
ISSUE: November 2005, page 46
COMMENTS: 4GB of solid state memory for a bargain price in an impressive skin. Battery life is poor at 14 hours and it doesn't support WMA, but these are the only downsides to this player. **Contact** navid@digitalcityonline.com.au.

SPECIFICATIONS: 4GB Flash Memory; USB 2 interface; Fixed Lithium-ion battery; Supports for MP3, AAC and WAV formats; 40 x 7 x 89mm (WDH); 42g.

MIMO WIRELESS ROUTER

Belkin Wireless Pre-N



PRICE: \$205
DELIVERY: \$15
SUPPLIER: www.scortec.com.au
INTERNET: www.belkin.com/au
ISSUE: October 2005, page 96
COMMENTS: The Pre-N fended off the competition in our tests with the highest speeds over long range, and it's also well suited to VoIP. The user-friendly installation routine is a welcome addition.

SPECIFICATIONS: MIMO 802.11n; 4 x 10/100 ports; 802.11e QoS; MAC cloning; 64/128-bit WEP; WPA; MAC filtering; DMZ; SPI firewall; IP filtering.

PREMIUM INKJET

Epson Stylus Photo R800

PRICE: \$548
DELIVERY: \$18
SUPPLIER: www.msy.com.au
INTERNET: www.epson.com.au
ISSUE: September 2004, page 44
COMMENTS: Epson's Hi-Gloss ink is the star of the show, producing supreme-quality photos that show no sign of fading even after months of exposure. The R800 is quick at printing photos too. It's comparatively pricey, but worth it.

SPECIFICATIONS: 5760 x 1440dpi 7-colour inkjet; USB 2; A4 photo in 2 mins, 35 secs; 6 x 4-in photo in 1 min, 37 secs; Max tested speed in draft, 11.6ppm.



'This is a printer for the enthusiastic amateur or pro photographer.'

COLOUR OFFICE LASER

Kyocera FS-C5020N

PRICE: \$1912
DELIVERY: \$15
SUPPLIER: www.e-shop.com.au
INTERNET: www.kyocera.com.au
ISSUE: April 2005, page 63
COMMENTS: This update to the C5016N, which convincingly won our recent colour lasers group test. Running costs are among the lowest around, and great image quality and expansion options make this an attractive buy.

SPECIFICATIONS: 600 x 600dpi colour laser; 16ppm claimed speed; 400MHz CPU; 128MB RAM; 500-sheet input, 250-sheet output trays; 10/100 Ethernet; USB 2; Parallel; PCL6, PCL5C and PostScript3 emulation.



WORKHORSE OFFICE LASER

HP Laserjet 4350dtn

PRICE: \$3176
DELIVERY: \$25
SUPPLIER: www.digitalyes.com.au
INTERNET: www.hp.com.au
ISSUE: April 2003, page 52
COMMENTS: The 4350dtn reached speeds of 68ppm in our tests - phenomenal for a machine of this size. We were impressed with its print quality in all areas too, and its build quality and networking features are high.

SPECIFICATIONS: 1200 x 1200dpi mono laser; 45ppm claimed speed; 460MHz CPU; 96MB RAM; 500-sheet input, 100-sheet multipurpose tray; duplex; 10/100 Ethernet; USB 2; Parallel; PCL6, PCL5C and PostScript3 emulation.



VALUE INKJET

Canon Pixma iP3000

PRICE: \$145
DELIVERY: \$14
SUPPLIER: www.msy.com.au
INTERNET: www.canon.com.au
COMMENTS: Canon uses all its design skill with the iP3000, as the shape and recessed ports mean you can use it flush against a wall. Print quality is good rather than spectacular, but features such as duplex and CD printing lift the Pixma above its budget brethren.

SPECIFICATIONS: 4800 x 1200dpi 4-colour thermal inkjet; USB 1.1; A4 photo in 2 mins, 30 secs; 6 x 4-in photo in 1 min, 9 secs; max tested speed in draft, 10ppm.



MULTIFUNCTION PRINTER

Canon Pixma MP780

PRICE: \$421
DELIVERY: \$18
SUPPLIER: www.msy.com.au
INTERNET: www.canon.com.au
ISSUE: May 2005, page 90
COMMENTS: Professional users will appreciate the MP780's automatic document feeder and well-featured fax. Add a great printer and a great scanner, and you have a winning combination.

SPECIFICATIONS: 4800 x 1200dpi 4-colour thermal inkjet; A4 photo in 6 mins; max tested speed in draft, 10.9ppm; 2400 x 4800ppi scanner; 33.6k fax; automatic document feeder; 2-line LCD; USB 2; PictBridge.



ADSL WIRELESS ROUTER

Draytek Vigor 2600VG

PRICE: \$279
DELIVERY: Free
SUPPLIER: www.dsl-warehouse.com.au
INTERNET: www.draytek.com.au
ISSUE: October 2005, page 95
COMMENTS: The Vigor 2600VG distinguishes itself with an outstanding feature set including full VPN functionality and, more importantly, extensive VoIP features. Slash your phone bills and save cash.

SPECIFICATIONS: 802.11g; ADSL modem; 4 x 10/100 Ports; 802.11E QoS; 64/128-bit WEP; WPA; MAC access control; VPN support (16 tunnels); 2 x RJ-45 phone ports for VoIP.



FLATBED SCANNER

Epson Perfection 3490 Photo

PRICE: \$206
DELIVERY: \$15
SUPPLIER: www.e-shop.com.au
INTERNET: www.epson.com.au
ISSUE: February 2006
COMMENTS: The image quality would happily grace a scanner costing three times the price, and it's quick: a 150ppi A4 scan took just six seconds, and a 300ppi scan a mere 21 seconds.

SPECIFICATIONS: 3200 x 6400ppi scanner; CCD sensor; 224 x 305mm scan area; USB 2 interface; transparency adaptor; ABBYY Finereader Sprint 6; 275 x 419 x 86mm (WDH)



AMD MOTHERBOARD

ASUS A8N-SLI Deluxe

PRICE: \$239
DELIVERY: From \$10
SUPPLIER: www.gamedude.com.au
INTERNET: www.asus.com.au
ISSUE: February 2006
COMMENTS: This fully featured nForce4 chipset supports PCI Express graphics cards and SLI - it isn't short of features. It's also the fastest Socket 939 we've seen.

SPECIFICATIONS: Socket 939; NVIDIA nForce4 SLI; 2x PCI Express 16x; 2 x PCI Express 1x; 3 x PCI slots; 4 x DIMM sockets; max 4GB PC3200; 8-channel audio; 4 x SATA RAID0, 1, 5, 10; 4 x SATA RAID0, 1+2; Dual Gigabit Ethernet.



The A-LIST

INTEL MOTHERBOARD

Abit AL8



PRICE: \$212

DELIVERY: \$10

SUPPLIER: www.megapc.com.au

INTERNET: www2.abit.com.tw

ISSUE: October 2005, page 51

COMMENTS: The AL8 is a great choice for Pentium D setups – just note it doesn't support the Pentium 4 Extreme Edition or SLI graphics. But the low price, plentiful RAID options and High Definition Audio more than compensate.

SPECIFICATIONS: Socket 775; Intel 945P chipset; ICH7R south bridge; 7.1 audio; 1 x PCI-E (16x); 3 x PCI-E (1x); 2 x PCI; 4 x DDR2; Ultra ATA/100; 6 x SATA 2; 2 x PCI; 4 x USB 2; FireWire; 2 x Digital S/PDIF out; Gigabit Ethernet.

PERFORMANCE GRAPHICS CARD

Albatron 7800GT



PRICE: \$578

DELIVERY: \$10

SUPPLIER: www.umart.net

INTERNET: www.albatron.com.tw

ISSUE: November 2005, page 127

COMMENTS: Despite costing some \$200 less than a 7800 GTX, this 7800 GT card only sacrifices a tiny amount of performance; most importantly, it can still play even the toughest games at 1600 x 1200 resolutions with anti-aliasing switched on.

SPECIFICATIONS: PCI-E; NVIDIA GeForce 7800 GT; 400MHz core; 256MB 500MHz GDDR3 RAM; 256-bit memory interface; 7/20 vertex/pixel pipelines; 2 x DVI-I; video in/out.

INTERNAL DVD WRITER

Lite-On SOHW 1693S



PRICE: \$64

DELIVERY: \$9

SUPPLIER: www.newell.net.au

INTERNET: www.liteon.com

ISSUE: December 2005, page 91

COMMENTS: There's no excuse for having a slow, under-specified DVD writer now that you can buy one of the fastest drives on the market (including dual-layer writing) for under \$70 makes this a steal.

SPECIFICATIONS: EIDE DVD Writer; 2MB Buffer; 16x DVD-R; 16x DVD-R; 8x DVD-RW; 6x DVD-RW; 4x DVD-R DL; 4x DVD-R DL; 48x CD-R; 24x CD-RW; CyberLink Power2Go; Nero Express Suite.

VALUE GRAPHICS CARD

Sapphire Radeon X800 GTO Ultimate

PRICE: \$289

DELIVERY: \$15

SUPPLIER: www.pc.net.au

INTERNET: www.sapphiretech.com/en

ISSUE: January 2006, page 90

COMMENTS: The passively cooled X800 GTO offers phenomenal power for the price. It can even play the latest games at 1600 x 1200. Only Shader Model 3 support is missing.

SPECIFICATIONS: PCI Express; Radeon X800 GTO; 400MHz core clock; 256MB 480MHz GDDR3 RAM; 6 vertex and 12 pipelines; 256-bit memory interface; Shader model 2; S-Video, D-SUB, DVI.

EXTERNAL HARD DISK

Lacie 250GB USB 2



PRICE: \$262

DELIVERY: Free

SUPPLIER: www.digitalcityonline.com.au

INTERNET: www.lacie.com/au

ISSUE: July 2005, page 88

COMMENTS: It's quiet, compact and with a 250GB capacity it's more than enough. It's also cheaper per GB than many internal drives. Contact navid@digitalcityonline.com.au.

SPECIFICATIONS: USB 2; 250GB; 7200RPM; 8MB buffer; 290dB sound level (measured); 10.63ms average seek time (measured); 2yr RTB warranty; 112 x 189 x 36mm (WDH); 900g.

INTERNAL HARD DISK

200GB Maxtor DiamondMax 10



PRICE: \$116

DELIVERY: \$10

SUPPLIER: www.msy.com.au

INTERNET: www.maxtor.com.au

ISSUE: July 2005, page 90

COMMENTS: Nothing else can match the DiamondMax 10 for its mixture of quietness and value for money: the 200GB model works out at just 58 cents per gigabyte. And now it's lead-free too.

SPECIFICATIONS: Model 6L200MD; SATA; 300GB; 7200RPM; 8/16MB buffer; 28.80dBa sound level (measured); 10.13ms average seek time (measured); 600,000 hours MTBF; 2yr RTB warranty.

SOUND CARD

Creative X-Fi XtremeMusic

PRICE: \$195

DELIVERY: \$15

SUPPLIER: www.scorpctec.com.au

INTERNET: <http://au.creative.com>

ISSUE: December 2005, page 58

COMMENTS: With onboard audio providing more than enough power for most users the sound card market is declining. But the X-Fi is a welcome update to the Sound Blaster that can deliver perceptibly better audio.

SPECIFICATIONS: Line/mic/coaxial S/PDIF input; 7.1 line output (on three mini-jacks); PCI; 24-bit/96kHz input and output; 109dB signal-to-noise ratio; supports EAX Advanced HD 4, ASIO 2, Dolby Digital EX and DTS ES.

ANTI-SPYWARE

PC Tools Spyware Doctor 3.2



PRICE: US\$30

UPGRADE: N/A

SUPPLIER: www.pctools.com

INTERNET: www.pctools.com

ISSUE: December 2005, page 79

COMMENTS: Perhaps not the best-known anti-spyware app, but it proved to be the best in our vigorous tests by some distance: it had the highest detection, removal and blocking rates. With a seamless updating process, blistering scan times and hordes of useful features, Spyware Doctor is our clear favourite. And it's equally suitable for novices as it is experts.

'Equally suitable for the novice and the expert, Spyware Doctor is a clear winner.'

WEB DEVELOPMENT SUITE

Macromedia Studio 8



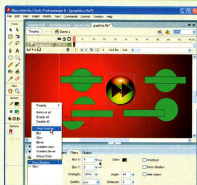
PRICE: \$1344
UPGRADE: \$545
SUPPLIER: www.advancesoftware.com.au/pca

INTERNET: www.macromedia.com.au

ISSUE: November 2005, page 92

COMMENTS: Although Dreamweaver 8 isn't a huge improvement, it's still the best page-oriented web authoring package available.

For those wanting to deliver a richer web experience, Flash Professional 8 sets new standards. And Studio 8 is the best way to buy into both, not to mention Fireworks, Contribute 3 and FlashPaper 2.



'Studio 8 is a watershed release.'

INTERNET SECURITY SUITE

ZoneAlarm Internet Security Suite 6



PRICE: \$90

UPGRADE: N/A

SUPPLIER: www.zonelabs.com.au

INTERNET: www.zonelabs.com.au

ISSUE: November 2005, page 69

COMMENTS: A highly effective anti-spyware tool adds the finishing touch to ZoneAlarm's many existing strengths: arguably the best software firewall around, some brilliant privacy features, a strong anti-virus module and impressive spam filtering.

ACCOUNTS SOFTWARE

MYOB Accounting Plus v15



PRICE: \$429

UPGRADE: \$249

SUPPLIER: www.computeralliance.com.au

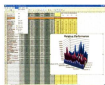
INTERNET: www.myob.com.au

ISSUE: July 2005, page 54

COMMENTS: Not a major upgrade but some fine tuning helps keep MYOB ahead of the game. It's highly customisable and provides everything from invoices, quotes and payment advices to full accounts control and reconciliation, GST to BAS preparation and business banking.

PERSONAL OFFICE SUITE

OpenOffice 2.0 NEW



PRICE: Free

UPGRADE: N/A

SUPPLIER: www.openoffice.org

INTERNET: www.openoffice.org

ISSUE: February 2006

COMMENTS: This suite makes it even easier to shift from Microsoft Office, with a reassuringly similar menu structure and excellent file compatibility. With a high quality word processor, spreadsheet, presentation software and database thrown in, you can't argue with its value.

CORPORATE OFFICE SUITE

Microsoft Office 2003 Professional Edition



PRICE: \$696

UPGRADE: \$464

SUPPLIER: www.advancesoftware.com.au/pca

INTERNET: www.microsoft.com/australia

ISSUE: January 2004, page 58

COMMENTS: Microsoft Office's corporate-friendly features (such as ease of roll-out) and emphasis on XML mean it can't be ignored. But perhaps its biggest strength is that every other business now expects you to be using Microsoft Office.

GRAPHICS/DESIGN SUITE

Adobe CS2 Standard Edition



PRICE: \$1370

UPGRADE: \$537

SUPPLIER: www.advancesoftware.com.au/pca

INTERNET: www.macromedia.com.au

ISSUE: February 2004, page 50

COMMENTS: With Photoshop costing over \$900 alone, it makes sense to buy Creative Suite 2, which also includes ImageReady, InDesign and Illustrator. But with powerful photo-editing tools, superb multilayer handling and non-destructive transformations, Photoshop remains the crown jewel.

VIDEO EDITING

Pinnacle Liquid Edition 6



PRICE: \$759

UPGRADE: N/A

SUPPLIER: www.computeralliance.com.au

INTERNET: www.pinnaclesys.com

ISSUE: March 2005, page 58

COMMENTS: Pinnacle Liquid Edition 6 is a complete editing package, with comprehensive file support including HDV. It's great at real-time editing and is capable of mixing at least three tracks of DV. At nearly half the price of Premiere Pro 1.5, it's a powerful, user-friendly app.

PHOTO EDITING

Adobe Photoshop Elements 4



PRICE: \$145

UPGRADE: N/A

SUPPLIER: www.advancesoftware.com.au/pca

INTERNET: www.adobe.com.au

ISSUE: January 2006, page 52

COMMENTS: Elements 4 makes it ridiculously easy to organise photographs, including the ability to automatically recognise faces. You then have the choice to quickly fix photos or tap into the Photoshop-based power, including layers. Then output the results to slide show, WMV file, DVD or the web.

Reviews Roundup

TOP 10 PCs

	MODEL NAME	PRICE	ISSUE	PAGE	SPECIFICATION	VERDICT	SCORE
1	 Scorptec Stinger <small>PC AUTHORITY RECOMMENDS</small>	\$3999	97	48	2.2GHz Athlon 64 X2 4400+; 1GB PC3200 RAM; 500GB HDD; GeForce 7800GTx; 19in LCD.	Virtually no detail has been ignored in this very well-rounded, powerful system.	*****
2	 TI Power Dual AMD 4000 <small>PC AUTHORITY RECOMMENDS</small>	\$3999	97	47	2.4GHz Athlon 64 X2 4800+; 1GB PC3200 SDRAM; 400GB HDD; GeForce 7800GTx; 19in LCD monitor.	A good-value and very powerful system for those seeking ultimate performance.	*****
3	 PC Express Phoenix 1550A <small>PC AUTHORITY RECOMMENDS</small>	\$3800	96	38	2.2GHz Athlon 64 X2 4200+; 1GB 3200DDR RAM; 256MB XpertVision GeForce 7800GTx; 500GB HDD; 19-inch LCD.	A near-perfectly balanced performance PC.	*****
4	 Alitech Zed Cryo <small>PC AUTHORITY RECOMMENDS</small>	\$6423	95	38	2.8GHz Athlon 64FX-57; 1GB 3200XL RAM; 2 x 7800GTx SLI; 320GB HDD; 19-inch LCD.	Obscenely fast, although some features could be better. As could the noise.	*****
5	 Dell Dimension 9100 <small>PC AUTHORITY RECOMMENDS</small>	\$2699	95	44	3GHz Pentium D; 1GB PC2-5300 RAM; 6800 graphics; 160GB HDD; 19-inch LCD.	A mid-range dual-core system that offers great value for money.	*****
6	 TI Super Dual AMD 2500 <small>PC AUTHORITY RECOMMENDS</small>	\$2499	97	51	2.2GHz Athlon 64 X2 4400+; 1GB PC3200 SDRAM; 400GB HDD; GeForce 6600GT graphics; 19in LCD.	A very tidy system for the money. Only mediocre 3D speed keeps it from climbing higher.	*****
7	 PCMarket SDS-1	\$999	92	42	AMD Athlon 64 2800+; 512MB RAM; 80GB HDD; 17-inch LCD; RADEON 9250.	A very good machine for under a grand, and with some flexibility for future upgrades.	*****
8	 PC Market Athlon64 GD5S <small>PC AUTHORITY RECOMMENDS</small>	\$1499	92	42	1.8GHz Athlon 64 3000+; 1GB PC3200 DDR RAM; 128MB Leadtek GeForce 6600GT; 160GB HDD; 17-inch LCD.	No obvious weak points make this our budget system of choice	****
9	 Pioneer DreamVision PC	\$1999	98	42	1.8GHz Athlon 64 3000+; 1GB PC3200 DDR RAM; 128MB Leadtek GeForce 6600GT; 160GB HDD; 17-inch LCD.	No obvious weak points make this our budget system of choice.	****
10	 Aztec G-Phase	\$3999	96	41	2.2GHz Athlon 64 3700+; 1GB PC3200 RAM; 2 x Albatron 7800GTx SLI; 160GB HDD; 19-inch CRT.	Some great gaming components, but it's overpriced for the spec.	****

FOCUS ON: Centrino

The Centrino name refers to a platform consisting of a CPU, chipset and wireless module. Pentium M is the CPU of choice for Centrino, and consists of low power processors designed to run coolly and efficiently, resulting in a more appropriate processor for a notebook environment. Centrino recently went through a revamp with the next generation 'Sonoma' platform, and is due for another update with 'Napa'.

TOP 5 MCEs

		ISSUE	PAGE
1	Enspire AVR-200 \$1699 1.8GHz Athlon 64 3000+; Radeon Xpress 200; 512MB PC3200 RAM; 200GB ✓ RECOMMENDED: The Enspire looks good and sports everything it needs while keeping the price down. *****	98	43
2	Alitech Maestro Pro 2 \$2999 Intel Pentium D 820; Intel 945P chipset; 1GB PC2-5200 RAM; NVIDIA GeForce 6600 ✓ LABS WINNER: Top-notch high performance, great design and impressive build quality too. *****	96	92
3	Fujitsu Deskpower TX \$5499 3GHz Pentium 4 260; Intel 915G chipset and graphics; 512MB PC4300 RAM; 600GB ✓ RECOMMENDED: Despite some quirks this is a desirable system that brings both computer illuminati and illiterati into the world of Media Center. *****	99	38
4	Claritas TeraServer CTS10000 \$5499 2.2GHz AMD Athlon 64 3500+; VIA K8T800P chipset; 1GB PC3200 RAM; GeForce 6600; 1000GB. More features than you'd think you need. But even if money was no object we'd still have doubts. *****	96	92
5	Total Home Theatre PC 301 \$3200 2GHz AMD Athlon 64 3200+; NVIDIA nForce 4 chipset; 512MB PC3200 RAM; NVIDIA GeForce 6600; 200GB HDD It just tipped the scales in our noise test, but this is a very tempting system. *****	95	40

DATA RECOVERY

1	FlashPhoenix	\$68	98	56	825KB download	FlashPhoenix will read most types of memory card and recover just about every image format as well.	*****
2	Driver Magician	US\$30	98	56	3.2MB download	Backup up a database, fix corrupted drivers, back up and restore the Registry and more.	*****
3	DiskInternals CD & DVD Recovery	US\$30	98	56	1.17MB download	Supports multiple disc formats and will process ISO 9660 and Joliet filesystems.	*****
4	PC Tools Registry Mechanic	US\$30	98	56	3.2MB download	Registry Mechanic optimises and compacts your Registry for the best system performance.	*****
5	Accent Office Password Recovery	US\$50-66	98	56	573KB download	A powerful recovery tool to help you crack forgotten passwords.	****




















TOP 5 SMB PCs

	ISSUE	PAGE
1	Dell OptiPlex GX620 USFF \$1436 3GHz Pentium 4 531; 512MB PC2-4200 RAM; Intel 945G Express chipset; 80GB HDD. ✓ RECOMMENDED: The smallest GX620 is the pick of Dell's bunch. Quiet, stylish and perfectly tuned for business. *****	95 56
2	HP dc7600 Slim Desktop \$1270 2.8GHz Pentium 4 521; 512MB PC2-4200 RAM; Intel 945G Express chipset; 80GB HDD. ✓ RECOMMENDED: With a low price, the Ultra Slim is excellent value for money. *****	96 79
3	HP dc7600 Convertible MT \$1270 2.8GHz Pentium 4 521; 512MB PC2-4200 RAM; Intel 945G Express chipset; 80GB HDD. The Minitor demonstrates the versatility of HP's range. *****	95 56
4	Dell OptiPlex GX620 SF \$1499 3GHz Pentium 4 531; 512MB PC2-4300 RAM; Intel 945G Express; 80GB HDD. ✓ RECOMMENDED: Quiet, stylish and perfectly tuned for business. *****	95 56
5	Dell OptiPlex GX620 MT \$1499 2GHz Pentium M; 1GB DDR2-533; NVIDIA GeForce 6600; 15.4-inch screen; 60GB HDD. ✓ RECOMMENDED: Like the SF, but with a larger, and more functional, case. *****	95 58

FOCUS ON: Crossfire

This is ATI's answer to NVIDIA's SLI technology, which allows two cards to run in a single machine to boost performance. It only requires the use of a master card to run Crossfire, allowing a wider choice for consumers. Crossfire works by using a number of load sharing techniques, like splitting the screen into sections for each card, or using individual cards to render odd and even frames.

TOP 10 NOTEBOOKS

	MODEL NAME	PRICE	ISSUE	PAGE	SPECIFICATION	VERDICT	SCORE
1	 ITC Millennia 7350 	\$4999	94	43	3.6GHz Pentium 4; 2GB DDR2-533 RAM; GeForce Go 6800 Ultra; 17-inch display; 160GB HDD.	The mother of all notebooks for those after pure, unadulterated grunt and features.	*****
2	 Acer Ferrari 4005WLMi 	\$3999	94	37	AMD Turion 64 ML-37 (2GHz) CPU; 1GB RAM; 100GB HDD; ATI X700 graphics; 15.4-inch screen.	This Turion-powered 'book is an unashamed show-off laptop for unashamed laptop show-offs.	*****
3	 Dell Latitude D410 	\$3270	96	44	2GHz Pentium M 760; 1GB PC2-4200 RAM; 60GB HDD; Intel GMA 900 graphics; 12.1-inch display.	Top-notch performance, great design and impressive build quality too.	*****
4	 Sony VAIO VGN-TX17GP 	\$3799	97	52	1.2GHz ULY Pentium M 753; 1GB PC3200 RAM; 11.2-inch widescreen; Intel GMA950 graphics; 60GB HDD.	A notebook showcasing all Sony's usual design skill, squeezing a dual-layer DVD writer into a sleek 1.4KG.	*****
5	 Lenovo ThinkPad X41 	\$3649	95	40	1.5GHz Pentium M 758 LV; 512MB PC2-4200 RAM; 60GB HDD; Intel GMA 900 graphics; 12.1-inch display.	Great build quality, a remarkably low weight and impressive battery life, but expensive.	*****
6	 Toshiba Portege R200 	\$3220	95	43	1.2GHz Pentium M 753 ULY; 512MB PC2-4200 RAM; 60GB HDD; Intel 915GM graphics; 12.1-inch display.	Outstandingly engineered. Less ergonomic but lighter alternative to the X41.	*****
7	 Dell Inspiron D610 	\$3032	94	38	Intel Pentium M 750 1.9 GHz; 1GB DDR2; 915GM graphics; 40GB HDD.	It's expensive but well worth the money. For business use, you won't go wrong with it.	*****
8	 HP Compaq nw8240 	\$4639	98	38	2.13GHz Pentium M 770; 1GB RAM; 15.4-inch widescreen; ATI Mobility FireGL V5000 graphics; 80GB HDD.	Impress your clients, do real work on the move or at your desk, and maybe even watch the occasional widescreen movie. The nw8240 is a professional tool that has it all.	*****
9	 Compaq Presario V2340AP 	\$1173	98	38	1.4GHz Celeron M 360; 256MB PC2700 RAM; 14-inch widescreen; Intel 915GM graphics; 40GB HDD.	What it lacks in power is made up for in design and sheer value. If you're a light-use user, it's an excellent choice.	*****
10	 ASUS W2POVC 	\$4999	93	60	2.13GHz Pentium M; Intel 915PM chipset; 1GB RAM; 17-inch widescreen; Mobility Radeon X700; 80GB HDD.	Big, black and beautiful. This notebook is one with the lot. It gives Apple a run for its money for style, but you do pay a premium.	*****

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Reviews Roundup

TOP 10 COMPACT DIGITAL CAMERAS

	MODEL NAME	PRICE	ISSUE	PAGE	SPECIFICATION	VERDICT	SCORE
1	 Canon Digital IXUS 55 <small>PHOTOGRAPHY AUTHORITY RECOMMENDED</small>	\$499	97	64	5MP CCD; USB 2; 640 x 480 at 30fps video mode.	An uninspiring and slightly chunkier update to a phenomenal camera. It's the best compact you can buy.	*****
2	 Canon Digital IXUS 50 <small>PHOTOGRAPHY AUTHORITY RECOMMENDED</small>	\$473	95	63	5MP CCD; 2592 x 1944 max resolution; 640 x 480 30fps movies.	Great image quality, both for stills and video, all wrapped up in a desirable, well-built chassis.	*****
3	 Sony Cyber-Shot DSC-W5 <small>PHOTOGRAPHY AUTHORITY RECOMMENDED</small>	\$599	91	47	5MP CCD; 2.5-inch LCD; 32MB internal memory; 640 x 480 video mode.	A minor update, but superbly engineered and with great image quality.	*****
4	 Samsung Digimax V700 <small>PHOTOGRAPHY AUTHORITY RECOMMENDED</small>	\$899	91	72	7.1MP CCD; 3072 x 2304 max resolution; 38-114 focal length; USB.	A well-priced digital compact, with all the bells and whistles.	*****
5	 Canon Digital IXUS 700 <small>PHOTOGRAPHY AUTHORITY RECOMMENDED</small>	\$849	91	72	7.1MP CCD; 3072 x 2304 max res; 37-111 focal length; USB.	Small, sexy and fast. You'd be hard pressed to find something as small that performs as well.	*****
6	 HP Photosmart R717	\$499	95	63	6.2-megapixel CCD; 2864 x 2160 max resolution; 320 x 240 30fps movies.	An attractive price makes the R717 a good choice for undemanding photography.	****
7	 Olympus C-70 Zoom	\$899	91	74	7.1MP CCD; 3264 x 2448; 38-190 focal length; USB.	A good performer all-round. This offers great value for money.	*****
8	 Casio Exilim Pro EX-P700	\$999	91	73	7.2MP CCD; 3072 x 2304 max res; 33-132 focal length; USB.	A camera with good results. It's not the cheapest around, but it produces good quality images.	*****
9	 Konica Minolta DiMAGE A200	\$1399	91	73	8MP CCD; 3264 x 2448; 24-200 focal length; USB.	Well featured but an average performer. There's better value had in compacts, or up the scale to SLR.	*****
10	 Sony Cyber-Shot DSC-V3	\$1499	94	43	7.1MP CCD; 3072 x 2304; 34-136 focal length; USB.	A relatively high price tag lowers value but is otherwise a good all-rounder.	*****

FOCUS ON: HDMI

High Definition Multimedia Interface is a new, high bandwidth audio/visual interface that'll be used in next generation multimedia equipment. It supports high definition easily, and it'll also carry up to eight audio channels. So far, so good. On the flipside, it is also slated to carry HDCP signals, or High Definition Content Protection, which allow compatible hardware to display the signal. Incompatible hardware televisions or monitors may degrade the signal, or not display it at all.

TOP 5 17-in LCDs

		ISSUE	PAGE
1	Viewsonic VP730b \$459 2 x DVI; D-SUB; 8ms	98	43
	✓ RECOMMENDED: An excellent monitor that is hard to beat at the price. *****		
2	BenQ FP71V \$451 DVI; D-SUB; 4ms (grey-to-grey); stereo 1W speakers ✓ RECOMMENDED: Not the best technical performer, but great value for bargain buyers. *****	95	47
3	Polyview V372 \$389 8ms; DVI; D-Sub; 2 x 2.5W	94	69
	Dirt cheap but a good display. Questionable build quality stops it getting an award. *****		
4	Samsung SyncMaster 730BF \$420 4ms; DVI; D-Sub Samsung's practical, no-frills monitor isn't quite A-List material, but the 3-year zero-defect warranty is great. *****	99	44
5	ASUS PM17TS \$499 8ms; DVI; D-Sub; 2 x 2.5W	94	65
	Average all rounder, but excellent value for money. *****		

PHOTO EDITING

1	Adobe Photoshop Elements 4	\$145	98	52	Windows XP	Improved image management, enhancement and sharing make a great product even better.	*****
2	Adobe Photoshop CS2	\$1129; \$339 upgrade	92	62	Windows 2000 (SP3) onwards	Photoshop users will benefit from many new features and enhancements.	*****
3	Corel Paint Shop Pro X	\$299; \$169 upgrade	98	54	Windows 2000 (SP4)/XP	Improved usability, new photo-centric features and the bundling of Photo Album provide new focus.	*****
4	Macromedia Fireworks 8	\$406	96	61	Windows 2000/XP	A few tweaks to creative power, workflow and integration don't add up to much.	*****
5	Ulead Photolmpact 11	\$90; \$50 upgrade	98	58	Windows 98 SE onwards	A quirky and powerful alternative to Photoshop Elements 4, but it isn't as easy to use.	*****











TOP 5 MP3 players

	ISSUE	PAGE
1 Apple iPod nano \$359 4GB Flash memory; USB 2 interface; MP3, AAC and WAV supported; 40 x 7 x 89mm (WDH); 42g. ✓ RECOMMENDED: Stunning design, great capacity, the price is right but the 14 hour battery life is mediocre. *****	96	46
Apple iPod (Video) \$598 60GB hard disk; USB 2; MP3, AAC and WAV supported; 61 x 14 x 103mm (WDH); 157g ✓ RECOMMENDED: Smaller, lighter, cheaper, but not without its drawbacks. *****	98	44
3 iRiver iFP-900 series \$499 512MB Flash; USB 2; MP3, WMA, ASF and OGG; 64 x 19 x 51mm (WDH); 63g ✓ RECOMMENDED: Good performance, excellent build quality and packed with features. But it's pricey. *****	93	78
4 Creative Zen MicroPhoto \$380 8GB hard disk; USB 2; MP3, WMA and WAV; 51 x 17 x 83mm (WDH); Weight 115g. The best Creative Zen we've seen, but unless you crave WMA, Apple's iPods are better. *****	95	64
5 Sony NW-E107 \$289 1GB Flash memory; USB 2; MP3 and ATRAC supported; 56 x 19 x 56mm (WDH); 26g. A battery life that defies the laws of physics and a fabulous design. *****	95	64

FOCUS ON: Music formats

One consideration when buying a portable music player is music formats. For example, if your music library is based on WMA, you won't be able to play it on your iPod. Furthermore, DRM may wrap up certain rules around each song that dictates how it can be played and copied. We recommend storing media in an open, non-proprietary format, like OGG or MP3, wherever possible and converting it to proprietary formats where necessary.

TOP 10 GPS RECEIVERS

	MODEL NAME	PRICE	ISSUE	PAGE	SPECIFICATION	VERDICT	SCORE
1	 Mitac Mio 169 AUTHORITY RECOMMENDED	\$859	98	64	PDA with Windows Mobile 2003; 240 x 320 TFT; MIOMAP software.	It's not perfect but the combination of price, features and software just edged it ahead.	*****
2	 Navman PIN 570 AUTHORITY RECOMMENDED	\$939	98	64	PDA with Windows Mobile 2003; 240 x 320 TFT; SmartST 2005 software.	A razor's edge away from taking the laurels. A price drop could push it ahead in some people's eyes.	*****
3	 TomTom Go 500 AUTHORITY RECOMMENDED	\$1299	98	64	Standalone GPS; BlueTooth; TomTom Navigator 5 software.	Navigator 5 offers plenty of features and a supremely easy-to-use interface.	*****
4	 Travroute CoPilot Live Pocket PC 5 BlueTooth AUTHORITY RECOMMENDED	\$575	98	64	BlueTooth GPS receiver; CoPilot Live 5 software.	The fleet-management option is the killer feature of this package. A great choice if you already own a PDA.	*****
5	 Garmin StreetPilot c320	\$879	98	64	Standalone GPS; Garmin StreetPilot software.	The price coupled with similar ease-of-navigation makes it very tempting.	*****
6	 HP iPAQ hw6515 Mobile Messenger	\$840	98	64	PDA with Windows Mobile 2003 SE for Phone; 240 x 240 TFT; Quad-band; GPS phone; Whereis Navigator.	Disappointing when used with Whereis Navigator, but thankfully it's available with TomTom Navigator 5.	*****
7	 Acer n35	\$787	98	64	PDA with Windows Mobile 2003; 240 x 320 TFT; CoPilot Live 5 software.	Value and the navigation software is up there with the best. But the onboard speaker garbles the instructions.	*****
8	 Garmin eTrex	\$182	98	64	Standalone GPS; mono LCD screen.	No maps included but it lasts ages on two AA batteries - ideal if you're into outdoor pursuits and exercise.	*****
9	 Garmin iQue 3600	\$849	98	64	PDA with Palm OS 5; 320 x 480 TFT; Que 2.5 software.	We expected great things from one of the most established GPS brands, but the iQue 3600 has outdated software that lacks a 3D view.	**
	 Navman iCN320	\$599	98	64	Standalone GPS; SmartST software.	Cheap but far from cheerful. The iCN's dreadful mapping is far removed from its PDA relative.	**



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Reviews Roundup

TOP 10 LASER PRINTERS

	MODEL NAME	PRICE	ISSUE	PAGE	SPECIFICATION	VERDICT	SCORE
1	 Kyocera Mita FS-C5016N	\$3848	89	63	600 x 600dpi; 16ppm colour; 16ppm mono; 345 x 470 x 385mm (WDH).	Great quality and incredibly cheap running costs make the Kyocera a deserving winner.	*****
2	 HP Laserjet 4350dn	\$3176	65	52	1200 x 1200dpi; 68ppm mono; 418 x 533 x 498mm (WDH).	We're impressed with its print quality an features in all areas. And how does 68ppm grab you?	*****
3	 Xerox Phaser 8400DP	\$4394	89	63	600 x 600dpi; 24ppm colour; 24ppm mono; 422 x 533 x 368mm (WDH).	With low running costs and great quality, it's just slightly too expensive.	*****
4	 Epson AcuLaser C1900	\$2310	89	63	600 x 600dpi; 4ppm colour; 16ppm mono; 469 x 521 x 526mm (WDH).	Exceptional colour quality for the price, but slow and expensive to run.	****
5	 Epson AcuLaser C3000N	\$1299	89	63	600 x 600dpi; 24ppm colour; 24ppm mono; 439 x 590 x 445mm (WDH).	The AcuLaser is a great mid-range choice - it's quick and reasonably economical.	****
6	 Lexmark C760	\$3437	89	63	1200 x 1200dpi; 24ppm colour; 24ppm mono; 604 x 470 x 528mm (WDH).	A fast, good-quality printer, but note it suffers from high running costs and no integrated networking.	****
7	 Brother HL-2700CN	\$1549	89	63	600 x 600dpi; 8ppm colour; 31ppm mono; 480 x 420 x 385mm (WDH).	Good colour quality and incredible mono speed, but it's expensive to run.	****
8	 Oki C3100	\$898	89	63	600 x 1200dpi; 12ppm colour; 20ppm mono; 400 x 528 x 342mm (WDH).	Oki is ideal for those who don't need network capabilities and won't be printing in high volumes.	****
9	 HP Color LaserJet 2550n	\$1549	89	63	600 x 600dpi; 4ppm colour; 19ppm mono; 482 x 452 x 376mm (WDH).	The 2550n lacks speed and isn't the cheapest to run by a long way.	***
10	 Samsung CLP-550n	\$799	89	63	600 x 600dpi; 50ppm colour; 20ppm mono; 510 x 467 x 405mm (WDH).	Compact and capable of decent quality, but it lacks features and is slow.	***

FOCUS ON: Online gaming

Regular multiplayer games are typically free to play, have between two and 32 players, are round-based, and fall in the FPS, sporting or real-time strategy genres. Massively multiplayer games are mostly role-playing games (MMORPG), are subscription-based, feature massive persistent world and played by upwards of a thousand players at any time. Most online games require a hefty hardware setup and broadband connection.

TOP 5 MFDs

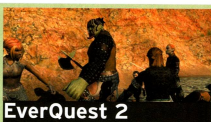
		ISSUE	PAGE
1	Canon Pixma MP780 \$599 4800 x 1200 printer; 9600 x 9600 scanner; 17ppm colour; 25ppm mono; 486 x 472 x 314mm (WDH). ✓ LABS WINNER: Able to perform all functions equally well. This is a true all-rounder. *****	90	89
2	Samsung SCX-4100 \$399 600 x 600 printer; 600 x 600 scanner; 14ppm mono; 422 x 400 x 239mm (WDH). ✓ RECOMMENDED: An excellent B&W laser unit, with great scanning quality. *****	90	89
3	Epson Stylus Photo RX630 \$599 5760 x 1440 printer; 2400 x 4800 scanner; 16ppm colour; 17ppm mono; 456 x 256 x 439mm (WDH). Designed to cater for the photo enthusiast, but lacks versatility. *****	90	89
4	Lexmark X7170 \$499 4800 x 1200 printer; 19,200 x 19,200 scanner; 15/22ppm colour/mmono; 490 x 427 x 305mm (WDH). A good unit, overshadowed by its award winning brother, the Lexmark P6250. *****	90	89
5	HP PhotoSmart Z710 \$699 4800 x 1200 printer; 19,200 x 19,200 scanner; 20ppm colour, 30ppm mono. No digital input and an average display just can't compete. *****	90	89

HOT PICKS: MMORPGs



World of Warcraft

Blizzard's popular MMORPG shows no sign of letting up. Simple gameplay, tons of players, and a gorgeous world to adventure in. Monthly cost from US\$12.99.



EverQuest 2

The original and, some still claim, the best mainstream MMORPG. It's a big world, with a loyal fanbase and complex gameplay. Monthly cost from US\$12 per month.



Eve Online

For a change of pace from hack and slash, Eve Online is a deep, gorgeous and rewarding game, provided you have the time to invest. Monthly cost from US\$10.95.

Inside: Graphics

With ATI and NVIDIA gunning for your dollars, there's many options out there. We give you the lowdown on modern graphics cards.

GPU

GPUs are staggeringly fast these days with ATI's top model clock speed running at 625 MHz and NVIDIA's at 550 MHz - faster than some PC's processors of just four years ago. The core of the chip is split into several areas. These include the memory interface (256-bit for mid and high-end cards, 128-bit for low-end cards); 2D and video engines for the simple processing of non-3D graphics; pixel pipelines and vertex shaders for generating 3D pixels and determining how they appear under various special effects.

HEATSINK FAN

Like a computer's CPU the graphics card's GPU (graphics processing unit) gets incredibly hot when under load. If it's not cooled then it will overheat and your PC will crash. Not surprisingly, the latest high-end graphics cards require an enormous amount of cooling power - offered by large heatsinks and fans. Fortunately, even though they are constantly getting larger, they're getting quieter too.

MEMORY

Graphics cards now sport more onboard memory than some computers with both NVIDIA and ATI's top-end cards offering 512MB of super-fast GDDR 3 memory. This allows large and complicated textures to be stored close to the GPU rather than being accessed through the PC system's memory or the hard disk (at great expense to performance). However, as with processors, when memory on high end cards is under load it gets hot and require at least some degree of cooling - usually mini heatsinks.

DISPLAY OUTPUT

There are two standard display interfaces: DVI and D-Sub. DVI (Digital Video Interface) is always the best to use as the digital signal is not changed from the moment it is generated to the moment it is displayed. The D-Sub interface is analogue and requires a digital signal to be broken up into a weaker analogue signal (often before being converted into digital once again). Nowadays D-Sub connectors offer quality that is difficult to distinguish from digital, but it's still a bit hit and miss. Such connectors are still included to support legacy peripherals like old monitors.

INTERFACE

Older graphics cards sport an AGP interface which slots into the motherboard. However, most modern graphics cards now use PCI-Express. A 1x PCI-Express slot allows a throughput of 250Mb/s but graphics cards use larger x16 slots which allow 4000Mb/s. The last generation of AGP slots offered 8x multipliers which allowed a maximum theoretical throughput of 2133Mb/s.

TOP 5 HDDs: EXTERNAL

		ISSUE	PAGE
1	LaCie 250GB USB 2 \$396 USB 2; 250GB; 7200 RPM ✓ RECOMMENDED: Quiet, compact and with a decent capacity. It offers outstanding value for money. *****	92	94
2	LaCie D2 Big Disk 500GB \$799 USB 2/FireWire 800; 500GB; 7200 RPM Huge capacity and fast over FireWire 800: a great choice if you have this interface. *****	92	96
3	Maxtor OneTouch II \$449 USB 2/FireWire; 200GB; 7200 RPM Good performance, good value and quiet too. *****	92	96
4	Seagate Portable 100GB \$499 USB 2; 100GB; 5400 RPM Expensive for the capacity, but highly portable and virtually silent. ****	92	99
5	Seagate 200GB External \$349 USB 2/FireWire; 200GB; 7200 RPM Relatively expensive per GB and noisy. ***	92	99

FOCUS ON: Shaders

Traditional 3D rendering involved basic polygons, colour, textures and light sources. However, much of the realistic graphics seen in recent games is due to programmable shaders. Simply, shaders allow objects to take on surface properties that would otherwise be impossible with current hardware. For example, a programmable shader could create a brick-like texture on a wall, complete with depth and shadows - all sitting on top of a single flat surface. Shader support is common in most recent graphics cards, but it's always best to ensure your card is compatible with newer games on the market.

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Reviews Roundup

TOP 10 GRAPHICS CARDS

	MODEL NAME	PRICE	ISSUE	PAGE	SPECIFICATION	VERDICT	SCORE
1	 Albatron 7800GT	\$609	96	127	NVIDIA 7800GT; 400MHz core; 500MHz memory; 256MB GDDR3.	It may not be the fastest, but it's fast enough and, at this price, a steal.	*****
2	 Albatron 6800 GS	\$359	98	49	NVIDIA 6800GT; 425MHz core; 500MHz memory; 256MB GDDR3; Shader Model 3	If the final price rivals Sapphire's GTO, this Shader Model 3 card, could be the mid-range card of choice.	*****
3	 Sparkle SP-PX70GVH 7800 GT	\$619	96	129	NVIDIA 7800GT; 400MHz core; 500MHz memory; 256MB GDDR3.	It's the same card at the same price as the Albatron. But the software bundle just pips it.	*****
4	 Asus Extreme N7800GT 512MB	\$849	99	48	NVIDIA 7800GTX 512MB; 550MHz core; 850MHz memory; 512MB GDDR3; Shader Model 3	Awesome performance, but too expensive if you won't push it to its limits.	****
5	 MSI RX1800 XT-VT2D 512E	\$799	99	47	ATI X1800 XT; 625MHz core; 750MHz memory; 512MB GDDR3; Shader Model 3	Stunning performance, but overkill for most and very, very expensive.	****
6	 XFX GeForce 7800 GTX	\$729	96	129	NVIDIA 7800GTX; 450MHz core; 625MHz memory; 256MB GDDR3.	The best software bundle, top performance and low price make the XFX's card the best 7800 GTX.	*****
7	 Sapphire Radeon X800 GTO Ultimate	\$289	98	49	ATI X800 GTO; 400MHz core; 480MHz memory; 256MB GDDR3; Shader Model 2	Offers a staggering amount of rendering power for your money. It's also passively cooled but only supports Shader Model 2	*****
8	 PowerColor X1800XL	\$609	98	46	ATI X1800 XL; 500MHz core; 500MHz memory; 256MB GDDR3; Shader Model 3	PowerColor's X1800 XL seriously rivals the best 7800GT cards.	*****
9	 GeCube Radeon X1600 XT	\$285	99	47	ATI X1600 XT; 590MHz core; 690MHz memory; 256MB GDDR3; Shader Model 3	Some respectable scores, but for now the best bet at this price is still the X800 GTO.	****
10	 MSI RX1300 Pro-TD256E	\$175	99	47	ATI X1300 Pro; 600MHz core; 800MHz memory; 256MB GDDR3; Shader Model 3	Quiet and unobtrusive, but only good for gaming at the lowest of resolutions.	****

FOCUS ON: PCI-E

PCI has been outdated for a long time, so much so that a separate bus, AGP, had to be created to handle increasing graphics power. PCI Express solves that problem by creating a fast, scalable system for all input and output devices. In addition, to its speed, it's also built on top of a serial architecture, where data travels in small lanes. To increase bandwidth, you simply add more lanes to it. This scalable nature allows it to scale up to speeds that can handle demanding components.

TOP 5: BURNERS

		ISSUE	PAGE
1	Lite-On SOHW1693S \$64 16x DVD+R; 16x DVD-R; 8x DVD-RW; 4x DVD-RW; 4x DVD+R9 DL; 4x DVD-R9 DL; 48x CD-R; 24x CD-RW ✓ WINNER Top-class performance at an unbelievable price. *****	97	89
2	Plextor PX-740A \$249 16x DVD+R; 16x DVD-R; 8x DVD-RW; 6x DVD-RW; 8x DVD+R9 DL; 4x DVD-R9; 48x CD-R; 32x CD-RW ✓ RECOMMENDED: A great burner, but you pay for it. *****	97	89
3	LG GSA-4165B \$136 16x DVD+R; 16x DVD-R; 8x DVD-RW; 4x DVD-RW; 4x DVD+R9 DL; 4x DVD-R9; 5x DVD-RAM; 48x CD-R; 32x CD-RW If speed isn't your top priority, the LG has a lot to offer. *****	97	89
4	Asus DRW-1608P \$64 16x DVD+R; 16x DVD-R; 8x DVD-RW; 6x DVD-RW; 6x DVD+R9 DL; 6x DVD-R9; 40x CD-R; 24x CD-RW A good price and fast quoted speeds are let down a little by performance. *****	97	89
5	HP dvd640i \$97 16x DVD+R; 8x DVD-R; 4x DVD-RW; 4x DVD-RW; 2.4x DVD+R9 DL; 40x CD-R; 24x CD-RW; LightScribe Best of the internal LightScribe drives. ***	97	89

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PT-L510SL

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(F) Any 5 Colour	\$35	\$138
(G) Any 8 Colour	\$54	\$220
(H) Any 10 Colour	\$65	\$276



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(Printhead Cartridges)

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BC-20	\$29	\$66

BROTHER® compatibles

DEAL 6

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(A) Any 4	\$36	\$86
(B) Any 8	\$72	\$172
(C) Any 12	\$104	\$258
(D) Any 16	\$136	\$344
(E) Any 20	\$159	\$430

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12A1980 (80)	\$37	\$63
10N0016 (16)	\$35	\$46
10N0026 (26)	\$37	\$64

EPSON® compatibles

DEAL 3

T0321, T0422-T0424, T0461-

T0474, T0491-496, T0561-564

(Includes Black, Cyan, Magenta, Yellow, Light-Cyan, Light-Magenta)

Our Price Original

(A) Any 4	\$38	\$72
(B) Any 6	\$57	\$108
(C) Any 8	\$74	\$144
(D) Any 12	\$106	\$216
(E) Any 16	\$139	\$288

DEAL 4

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T027/ T028/ T029/ T038/ T039

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Our Price Original

(A) 1 Bk + 1 Colour	\$22	\$96
(B) 2 Bk + 1 Colour	\$32	\$145
(C) 2 Bk + 2 Colour	\$44	\$190
(D) 4 Bk + 3 Colour	\$74	\$304
(E) 6 Black	\$60	\$270
(F) 6 Colour	\$69	\$245

DEAL 5

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S020089/ S020093/ S020108/

S020110/ S020187/ S020189/

S020191/ S020193

(Includes Black, Colour cartridges)

Our Price Original

(A) 1 Bk + 1 Colour	\$16	\$77
(B) 2 Bk + 1 Colour	\$22	\$110
(C) 2 Bk + 2 Colour	\$32	\$164
(D) 4 Bk + 3 Colour	\$56	\$238
(E) 6 Blacks	\$34	\$183
(F) 6 Colours	\$59	\$232

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1626A (26)	\$30	\$68
C8727A (27)	\$26	\$33
C8728A (28)	\$29	\$46
1629A (29)	\$30	\$55

1645A (45)	\$26	\$55
1649A (49)	\$32	\$57
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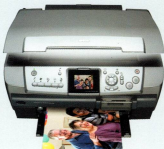
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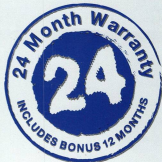
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